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Gazetteer of Seafloor Features in the New Zealand Region

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GAZETTEER OF SEAFLOOR FEATURES IN THE NEW ZEALAND REGION

R.M. Thompson*

ABSTRACT

This gazetteer contains a description of more than 430 submarine features, many of which are newly discovered, in the New Zealand region of the Southwest Pacific Ocean, here defined as the area from 24°S to 57°30'S, and from 157°E to 167°W.

INTRODUCTION

Many new seafloor features have been named on recently published charts and in published papers over the last two decades from the New Zealand region (Fig. 1).

This gazetteer incorporates the features from the previously published Wanoa and Lewis (1972) gazetteer (which has been out of print for many years) as well as additional features appearing on charts published to the end of December 1990. There are, however, three charts in press which will be published in 1991, and references to features on these charts have been included as well as the charts being listed, i.e., Arron and Lewis (Mahia), Baldwin and Lewis (Cook); and Mitchell (Hauraki).

References to published papers appear in the Literature Cited.

A list of charts searched at the New Zealand Oceanographic Institute for this compilation appears as Appendix 1. This may not be all the published charts available, but is an extensive collection.

For each feature there is a description after which a position is given for either a mid-point or the limits. Following each description there are references — to a published paper (often describing the feature), then a chart reference, or to both, including the first and latest published charts.

References to charts give the author, date, and name of chart.

e.g., Carter, 1976 (Cuvier, Ch).

Features included from the Wanoa and Lewis (1972) gazetteer are identified by *.

Unless stated otherwise, where more than one feature has the same first name (e.g., Lachlan Banks, Lachlan Ridge; Tauranga Depression, Tauranga Sea Valley), it is assumed they are all named from the same origin.

Where an update in terminology has occurred, e.g., Depression now Trough, High now Ridge, cross-references are given (refer also to Eade and Carter, 1975).

Features which are not included are Faults, Plate Boundaries, and Zones including Fracture, Shear, Tectonic, and Volcanic, and other non-morphological elements,

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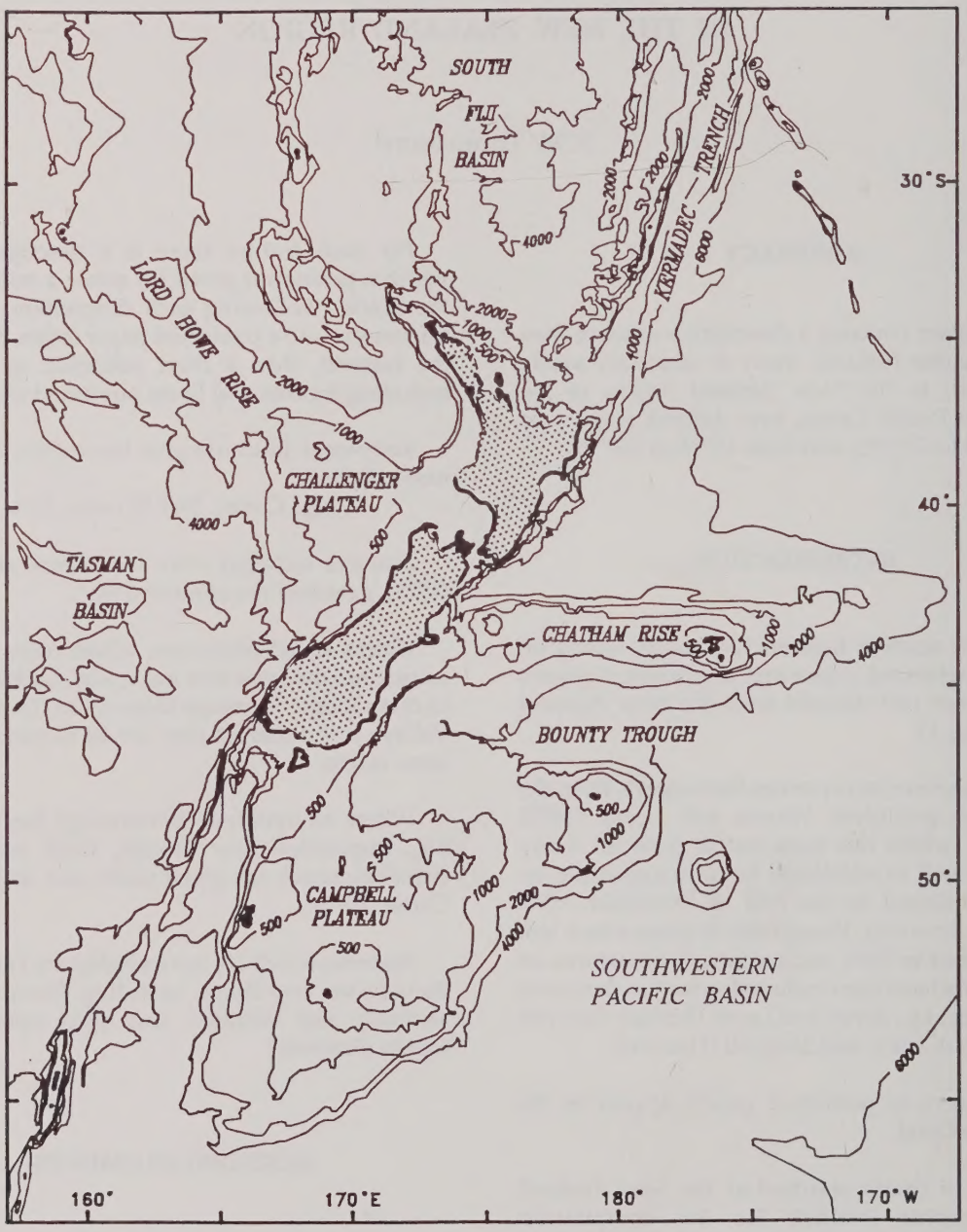

Fig. 1.
New Zealand region for this gazetteer (after Carter, 1980).
(Contours in metres)

GAZETTEER

Adams Bank*

On the upper continental slope at about 13 km from the Wairarapa coast. Rises from a surrounding depth of about 200 m to a minimum recorded depth of 140 m.

Position : 41°22'S, 176°01'E

Takes its name from Mount Adams in the adjacent Aorangi Ranges.

Pantin, 1963
Pantin, 1963 (Palliser, Ch)
Mitchell, 1988 (Palliser, Ch)

Aiguilles Canyon

In the outer-ocean section east of Great Barrier Island, the northern portion is aligned N–S, and the more southern portion aligned NE–SW where it shallows to 450 m. It reaches depths as great as 1,500 m.

Position : 35°3'S, 176°03'E

Named after an island off the northern extremity of Great Barrier Island.

Wright, 1989 (Cuvier, Ch)

Akaroa Sea Valleys

On the continental slope SSE of Banks Peninsula, this feature reaches a depth of 1,500 m from a shallower area to the north of 550 m.

Position : 44°30'S, 173°25'E

Taken from the name of the area on Banks Peninsula to the north.

Herzer, 1977 (Banks, Ch)

Akitio Depression* Pantin, 1963
Pantin, 1963 (Turnagain, Ch)
see **Akitio Trough**

Akitio High* Pantin, 1963
Pantin, 1963 (Turnagain, Ch)
see **Akitio Ridge**

Akitio Ridge

A NNE-trending ridge on the lower continental slope 110 km offshore from Castlepoint, southern Hawkes Bay Land District. Rises from surrounding depths of 2,400–2,300 m to a summit at 2,100 m deep.

Position : 40°50'S, 177°53'E

Named after the settlement and river on the adjacent Wairarapa coast.

Lewis, 1976 (Turnagain, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Akitio Trough

A broad, NNE-trending trough on the lower continental slope about 100 km offshore, south of Cape Turnagain, southern Hawkes Bay Land District. The floor of the trough is between 2,300 m and 2,500 m deep.

Position : 40°50'S, 177°40'E

Lewis, 1976 (Turnagain, Ch)

Albatross Canyon*

Extends from 2 km to 25 km offshore from the eastern side of Antipodes Island and from a depth of about 100–2,000 m.

Position : 49°43'E, 179° 00'E

Named after Albatross Point on Antipodes Island.

Cullen, 1969 (Antipodes Is, Ch)

Alderman Knoll

A small knoll NNE of Mayor Island in outer Bay of Plenty, east of Alderman Islands. It rises to form a crest about 750 m depth.

Position : 36°58'S, 176°31'E

Named after the adjacent islands.

Wright, 1989 (Bay of Plenty, Ch)

Alderman Trough

A trough, aligned NNE east of the Alderman Islands in the Bay of Plenty, with a depth of 1,450 m.

Position : 36°55'S, 176°29'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Carter, 1976 (Cuvier, Ch)
Wright, 1989 (Cuvier, Ch)
Wright, 1990 (Havre Trough, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Antipodes Scarp*

The steep, NE–SW-trending slope that forms the southeastern edge of the Campbell Plateau. Represents the southern portion of the Subantarctic Slope.

From : 48°S – 56°S, 179°W – 170°E

Name derived from Antipodes Island which lies at the top of the slope.

Cullen, 1967

Aorangi Depression* Pantin, 1963
Pantin, 1963 (Palliser, Ch)

see **Aorangi Trough**

Aorangi High* Pantin, 1963
Pantin, 1963 (Palliser, Ch

see **Aorangi Ridge**

Aorangi Ridge

Trends NE–SW at the bottom of the continental slope, 80 km off the Wairarapa coast. Rises about 400 m above the surrounding seabed to a depth of 2,300 m.

Position : 41°31'S, 176°52'E

Takes it name from the Aorangi Ranges on the adjacent land.

Mitchell, 1988 (Palliser, Ch)
Baldwin & Lewis, 1991 (Cook), Ch)

Aorangi Trough

Trends NE–SW on the lower continental slope 70 km from the Wairarapa coast. Flat floor at about 2,800 m deep. To the south it opens out into the Hikurangi Trench.

Position : 41°31'S, 176°46'E

Mitchell, 1988 (Palliser, Ch)

Aotea Seamount*

At the floor of the continental slope off Waikato about 200 km from both Cape Egmont and Auckland; situated at the southern end of the New Caledonia Basin. Rises from depths of 1,700–1,800 m to a nearly flat-topped summit at 970–1,000 m deep. Trends ENE–WSW and is about 19 km wide by about 50 km long at its base.

Position : 37°35'S, 172°10'E

Named after the *Aotea* canoe which was used in the Great Migration of the Maori to New Zealand.

Brodie, 1965
Brodie & Pantin, 1960 (North Island, Ch)
van der Linden, 1968 (Cook, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Arawhata Canyon

A deep-sided, narrow canyon, reaching depths of 1,600 m, incised into the continental shelf off Westland.

Position : 43°51'S, 168°23'E

Takes it name from the settlement and river on the adjacent land.

Carter, 1981 (Jackson, Ch)

Argo Bank*

On the western flank of the Lord Howe Rise near its northern end. One of the Lord Howe Island Seamount Chain. Rises from a depth of 2,000–2,500 m to a flat-topped summit at depths of less than 500 m.

Position : 23°15'S, 159°30'E

Named after the Scripps Institution of Oceanography vessel RV *Argo* which was used in 1961 to survey the western Tasman Sea.

Menard *et al.*, 1968 (Ch)
Monahan *et al.*, 1982 (Ch)

Ariel Bank*

A N–S-trending bank on the outer part of the continental shelf off Gisborne, about 15 km from shore. Rises from a surrounding depth of about 55 m at Penguin Rock to 9–4 m at Ariel Rocks.

Position : 38°44'S, 178°18'E

Named after the Ariel Rocks.

Pantin, 1963
Pantin, 1963 (Mahia, Ch)
Katz, 1975

Auckland Islands Ridge
An area southeast of Auckland Islands with a crest at 250 m deep. It follows a SW direction at the southern end of the Auckland Islands Shelf and is east of the Aucklands Slope.

Crest : 51°55'S, 165°30'E

Named after the Auckland Islands.

Summerhayes, 1967 (Auckland, Ch)

Auckland Islands Shelf*
An area that is less than 210 m deep on the western margin of the Campbell Plateau. Measures about 150 km from N–S and about 100 km from E–W, and has the Auckland Islands in the south-west corner. The western part is typically 180–210 m deep whereas the eastern part is 90–105 m deep.

Position : 50°15'S, 166°45'E.

Summerhayes, 1967
Summerhayes, 1967 (Auckland, Ch)

Aucklands Slope*
The slope that forms the western boundary of the Campbell Plateau. Descends to the Solander Trough and the Emerald Basin. Extends southwards to 750 km from the edge of the continental shelf off Stewart Island.

From : 47°S – 55*S, 167°E – 164°E

Summerhayes, 1969
Summerhayes, 1967 (Auckland, Ch)
Summerhayes, 1967 (Macquarie, Ch)

Aurora Trough*
About 8 km west of Macquarie Island trending N–S for about 40 km. Generally 500–800 m deep and connects to the Tasman Basin through a gap between two 200–300 m deep ridges.

Position : 54°42'S, 158°45'E

Named after Aurora Point on Macquarie Island. S.Y. *Aurora* was Shackleton's vessel.

Cullen, 1970 (Macquarie, Ch)

Awanui Sea-Valley
An almost N–S-trending valley with its deepest point in the centre at 2,000 m. Situated east off East Cape on the outer continental slope, at right angles to the Awanui Trough.

Position : 37°49'S, 179°07'E

Takes its name from Port Awanui on the adjacent mainland.

Cullen, 1977 (East Cape, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Awanui Trough
This trough crosses the Awanui Sea-Valley as it trends W–E on the outer continental slope.

Position : 37°48'S, 179°06'E

Cullen, 1977 (East Cape, Ch)

Awatea Seamount
A seamount in the northern Tasman Basin cresting at 3,500 m.

Position : 36°20'S, 158°15'E

Eade & van der Linden, 1977 (Bellona, Ch)

Awatere Ridge
A ridge northeast of East Cape trending W–E which has a crest at 1,200 m deep.

Position : 37°16'S, 178°51'E

Named after the Awatere River on adjacent East Cape Peninsula.

Cullen, 1977 (East Cape, Ch)

Balleny Basin
At the northern end of Foveaux Strait southwest off Fiordland, this almost N–S trending basin opens out to the south to merge with the Solander Basin.

Position : 46°40'S, 166°00'E

Norris & Carter, 1980

Barrier Bank*
On the upper continental slope 40 km northeast of Great Barrier Island. Flat-topped at a depth of about 330 m and separated from the slope to land-

ward by a 360 m deep saddle. Projects at right angles to the regional slope, the flat top being 18 km long by 10 km wide.

Position : 35°40'S, 175°45'E

Takes its name from the adjacent Barrier Islands.

Eade, 1971 (Poor Knights, Ch)

Bellona Gap*

Saddle on the Lord Howe Rise 600 km northwest of the Nelson Land District. Centre of the saddle 1,500 m deep. Separates the Challenger Plateau from the remainder of the Lord Howe Rise.

Position : 36°30'S, 167°00'E

Named after HMNZS *Bellona* which surveyed the Lord Howe Rise in 1952.

Brodie, 1964
Lawrence, 1967 (Ch)
Eade & van der Linden, 1977 (Bellona, Ch)

Bellona Trough

A trough on the western edge of the Challenger Plateau, trending N–S and reaching depths of 4,250 m at its southern end.

Position : 40°20'S, 165°45'E

This position is given for Bellona Gap in IHO/IOC (1988).

Eade & van der Linden, 1977 (Bellona, Ch)
Kroenke *et al.*, 1983 (Ch)

Bennett Knoll

On the margin of the Hikurangi Plateau, 140 km offshore, southeast of the Madden Canyon. It rises from about 3,000 m to a minimum recorded depth of 2,600 m.

Position : 41°05'S, 178°15'E

Named for Dr David Bennett, scientist in charge of the cruise on which this feature was discovered.

Baldwin & Lewis, 1991 (Cook, Ch)

Betty Guyot*

Trends N–S at the northern end of the Three Kings Rise. Rises from depths of about 1,800 m to a minimum depth of less than 500 m.

Position : 29°20'S, 174°00'E

Origin of name unknown.

Menard *et al.*, 1968 (Ch)

Bligh Sea Valley*

Extends from 15 km to 50 km west of the Bounty Islands towards the Bounty Ridge. Clearly defined from the edge of the Bounty Shelf at a depth of 250 m to a depth of about 500 m.

Position : 47°43'S, 178°30-'E

Named after Lt. W. Bligh, Commander of HMS *Bounty*. Bligh discovered the adjacent Bounty Islands in 1788.

Cullen, 1969 (Bounty Is, Ch)

Bollons Gap

Separates the Campbell Plateau to the west, from Bollons Seamount, in the Southwest Pacific Basin. The gap is divided, by a ridge or small seamount, into two channels which are 2.5–10 km wide at their narrowest parts. Has a depth of about 4,500 m.

Position : 45°45'S, 179°00'W

Named after Capt. J.P. Bollons, master of NZGS *Hinemoa* from 1898 to 1922. The *Hinemoa* was the N.Z. Government lighthouse and shipwreck relief vessel serving the subantarctic islands.

Carter, 1989

Bollons Seamount*

Large dome in the Southwestern Pacific Basin near the Subantarctic Slope, about 500 km east of Antipodes Islands. Rises from a depth of 5,000 m deep to about 2,500 m deep.

Position : 49°50'S, 176°30'W

Lawrence, 1967 (Ch)

Bounty Basin Fleming, 1951
see **Bounty Trough**

Bounty Channel*

A narrow and steep-sided channel incised as much as 500 m below the floor of the axis of the Bounty Trough. From a point 200 km off the Otago Peninsula it extends eastwards for about 600 km to

the Subantarctic Slope. Has numerous tributaries which rise on the outer continental shelf off Otago, on Campbell Plateau and on the Chatham Rise.

Position : At latitude 46°30'S from longitude 173°30'E – 178°00'W.

Named after HMS *Bounty* which first sighted the Bounty Islands.

Krause & Cullen, 1970 (Bounty, Ch)

Bounty Fan

A trough-head fan connected to the Bounty Trough by the deep-sea Bounty Channel.

Position : 47°00'S, 175°00'W

Carter & Carter, 1987
Carter, 1989

Bounty Platform*

The northeastern part of the Campbell Plateau; from it rise the Bounty and Antipodes Islands separated from the remainder of the Campbell Plateau by the Pukaki Saddle.

Position : 48°00'S, 179°00'E

This position is given for Bounty Plateau in IHO/IOC (1988).

Summerhayes, 1969a
Cullen, 1969 (Bounty Is, Ch)

Bounty Ridge*

Along the northern edge of the Campbell Plateau between the Pukaki Channel and the Bounty Platform. The crest ranges from 700 m to 1,000 m deep. From 70 km to 200 km west of the Bounty Islands.

Position : 47°30'S. 177°00'E

Krause & Cullen, 1970 (Bounty, Ch)

Bounty Shelf*

The flat top of the Bounty Platform, generally 130–200 m deep with the Bounty Islands at its western edge.

Position : 47°35'S, 179°15'E

Cullen, 1969 (Bounty Is, Ch)

Bounty Trough*

Broad depression extending from 50 km east of Otago Peninsula at a depth of 500 m, eastward for 900 km to the Subantarctic Slope between the Chatham Islands and the Bounty Islands, where its floor is about 4,500 m deep. The floor is cut by the series of channels that unite to form the Bounty Channel.

Position : 46°15'S, 178°00'W

Brodie, 1958, 1964
Brodie & Pantin, 1960 (South Is, Ch)
Krause & Cullen, 1970 (Bounty, Ch)

Bowling Bank* Summerhayes, 1969c
see **King Bank**

Brittania Guyots* Standard, 1961
see **North Tasman Seamounts**

Brodie Canyon

Trending NW–SE on the upper continental slope south of Otago Peninsula. It extends from a depth of 300 m to about 750 m.

Position : 46°20'S, 170°40'E

Named for Mr James W. Brodie, Director of N.Z. Oceanographic Institute from 1954 to 1977.

Carter, 1986 (Otago, Ch)

Brodie Seamount

A seamount on the eastern border of the Hikurangi Trough. Minimum depth about 1,500 m with 2,000 m relief.

Position : 37°30'S, 179°00'W.

Bradford *et al.*, 1982

Broughton Gap*

Trends N–S at the eastern end of the Chatham Rise, 350 km ENE of Chatham Islands.

Position : 42°40'S, 171°40'W

Named after Lt. W.R. Broughton, Commander of HMS *Chatham* who discovered the Chatham Islands in 1791.

Cullen, 1969 (Chatham, Ch)

Burt Bank

A bank with a crest at 100–120 m northwest of

Cape Reinga on the southern flank of Johnson Trough.

Position : 34°19'S, 172°19'E

This name has been used following the nomenclature on the relevant hydrographic chart.

Mitchell & Eade, 1990 (Three Kings, Ch)

Calyptogena Bank

A bank cresting at 710 m from a depth of 950 m in the west, situated in the centre of the Ritchie Ridge, east of the North and South Ritchie Troughs.

Position : 39°26'S, 178°26'E

Named after a vent fauna bivalve which was dredged by a commercial fisherman from this area in 1990.

Arron and Lewis, 1991 (Mahia, Ch)

Campbell Bank*

In eastern Cook Strait about midway between Cape Palliser and Cape Campbell, on the outer part of the continental shelf of northeastern South Island. Rises from a surrounding 150 m deep shelf to a minimum depth of 95 m.

Position : 41°46'S, 174°45'E

Takes it name from Cape Campbell.

Pantin, 1963
Pantin, 1963 (Palliser, Ch)
Mitchell, 1988 (Palliser, Ch)
Mitchell, 1988 (Campbell, Ch)

Campbell Channel*

A tributary of the Bounty Channel that is incised into the northern slope of the Campbell Plateau. Extends from the northern flank of the Pukaki Bank at a depth of 1,000 m to the Bounty Channel at a depth of 2,300 m.

Position : 48° 10'S – 46° 30'S, 172°55'E – 175°00'E

Named after Campbell Plateau.

Krause, 1966
Krause, 1964 (Bounty, Ch)
Krause & Cullen, 1970 (Bounty, Ch)

Campbell Island Rise*

The relatively shallow, southeastern portion of the Campbell Plateau. Generally at depths ranging from 150 m to 500 m, it extends for about 250 km east and about 100 km north of Campbell Island, and includes a ridge extending 250 km eastward from its southern extremity at latitude 53°S.

Position : 52°30'S, 170°00'E

Named as Campbell Rise in IHO/IOC (1988).

Summerhayes, 1969a
Summerhayes, 1966 (Pukaki, Ch)

Campbell Island Shelf*

The flat top of the Campbell Island Rise, generally 130–200 m deep with Campbell Island on its southwestern margin.

Position : 52°30'S, 169°30'E

Named after Campbell Island.

Summerhayes, 1967 (Campbell, Ch)

Campbell Plateau*

The triangular, southern part of the New Zealand Plateau bounded by the North Bounty Slope to the north, the Antipodes Scarp (southern Subantarctic Slope) to the southeast, and by the Aucklands Slope to the west. Generally 450–900 m deep. From it rise the New Zealand subantarctic islands.

Position : 50°00'S, 171°00'E

Fleming, 1951
Summerhayes, 1969a
Lawrence, 1967 (Ch)
Summerhayes, 1967 (Campbell, Ch)
Summerhayes, 1967 (Auckland, Ch)

Capel Bank•

On the western flank of the Lord Howe Rise, about midway between Noumea and Brisbane. Slightly elongated N–S. Rises from 2,000 m to 2,500 m deep at its base to a flat top at 100–300 m deep and to a minimum recorded depth of 45 m.

Position : 25°05'S, 159°35'E

First reported by HMS *Hyacinth* in 1835.

Standard, 1961
van der Linden, 1969 (Norfolk, Ch)

Carnley Sea Valley*

Broad depression in the Campbell Plateau at the foot of the slope from the Auckland Islands Shelf.

About 40 km SE of the Auckland Islands. Depth of the floor ranges between 500 m and about 600 m. May lead to the Cathedral Depression.

Position : 51°10'S, 166°40'E

Takes it name from Carnley Harbour in the adjacent Auckland Islands.

Summerhayes, 1967 (Auckland Is, Ch)

Caroline Ridge*

Parallel with, and 10–15 km west of, the Macquarie Ridge, extending from 90 km south of Macquarie Island to the latitude of Macquarie Island. Crest generally 200–400 m deep.

Position : 55°25'S – 54°36'S, 158°28'E – 158°40'E.

Named after Caroline Cove on Macquarie Island.

Cullen, 1970 (Macquarie, Ch)

Caroline Trough*

Extending from 8 km to 80 km south of Macquarie Island separating the Macquarie Ridge and the Caroline Ridge. Axis of the Trough ranges in depth from about 500 m to about 2,000 m. Centre of the Trough is about 10 km west of the Bishop and Clerk Islands.

Position : 54°50'S – 55°20'S, 158°42'E – 158° 31'E.

Cullen, 1970 (Macquarie Is, Ch)

Cascade Canyon

A very deep, narrow canyon reaching depths of about 1,600 m, incised into the continental shelf off Westland. The most southern of four such canyons.

Position : 44°00'S, 168°15'E

Named after Cascade Point on the adjacent land.

Carter, 1981 (Jackson, Ch)

Caswell High*

On the continental slope 50 km off Fiordland. Consists of a terrace and ridge trending parallel with the regional slope. Depth of terrace and crest of ridge about 3,500 m.

Position : 44°50'S, 166°30'E

Name derived from Caswell Sound, Fiordland.

van der Linden & Hayes, 1972 (Resolution, Ch)

Cathedral Banks*

An area of irregular topography on the Campbell Plateau centred 80 km southeast of the Auckland Islands. Trends NNE–SSW being 80 km long by 15 km wide. Individual banks rise abruptly from 600 m deep to peaks at 350–400 m deep.

Position : 51°30'S, 166°45'E

Name suggested by the spire-like appearance of the banks on echo-sounding records.

Summerhayes, 1969a
Summerhayes, 1967 (Auckland, Ch)

Cathedral Depression*

A NNE–SSW trending trough at the southern extremity of the Campbell Plateau. Extends from 100 km to 300 km south of the Auckland Islands. Separates the Auckland Islands Ridge from the remainder of the Campbell Plateau. Axis of trough 800–2,300 m deep.

Position : 51°50'S – 53°20'S, 166°10'E – 165°00'E

Named after the Cathedral Banks which are at the northern end of the depression.

Summerhayes, 1969a
Summerhayes, 1967 (Auckland, Ch)

Cavalli Canyons*

Several NE–SW trending canyons on the upper continental slope off the east coast of Northland. Extend from 200 m to at least 800 m deep.

Position : 34°50'S, 174°10'E

Named after the adjacent Cavalli Islands.

Eade, 1971 (Poor Knights, Ch)

Cavalli Seamount

A seamount generally trending W–E, with two flat tops. The western top is narrow and aligned N–S and crests at about 350 m, while the eastern top is flat, broad and roughly triangular in shape and crests at about 550 m.

Position : 34°10'S, 174°00'E

Mitchell & Eade, 1990 (North Cape, Ch)

Central Ridge

A ridge roughly S-shaped, separating Minerva

Abyssal Plain to the north, and Kupe Abyssal Plain to the south. It has rough topography, is over 100 km long, and rises to a depth of 3,000 m.

Position : 29°00'S, 177°00'E

Packham & Terrill, 1973
Davey, 1982

Central Viti Canyon*
On the upper continental slope 100 km WNW of Cape Egmont, Taranaki. Extends from a depth of 200 m to 1,000 m.

Position : 39°00'S, 172°25'E

Named after the NZOI research vessel MV *Viti.*

van der Linden, 1966 (Egmont, Ch)

Centre Bank Pantin, 1963
Brodie, 1966 (Cook Strait, Ch)
see **Nicholson Bank**

Centre Bounty Channel
see **Hoopers Channel**

Centre Channel*
One of the channels at the western end of the Bounty Trough, a tributary of the Bounty Channel. Forms at the confluence of several canyons at the foot of the steep upper continental slope, 70 km southeast of the Otago Peninsula. Extends eastward for 150 km.

Position : 46°17'S – 46°15'S, 171°20'E – 173°03'E

So named because it is the centre of the three western tributaries of the Bounty Channel.

Krause, 1964 (Bounty, Ch)
Brodie, 1970 (Otago, Ch)
Krause & Cullen, 1970 (Bounty, Ch)

Central Shelf
In the outer southern Wanganui Bight, southwest of Wanganui, about 100 m depth.

Position : 40°20'S, 174°30'E

Proctor & Carter, 1989

Challenger Plateau*
The shoaler, southeastern portion of the Lord Howe Rise, extending from the foot of the continental slope off western Cook Strait to the Bellona Gap. Generally 500–800 m deep.

Position : 38°30'S, 168°40'E

Named after HMS *Challenger* which was used to sound and sample the seabed on the Challenger Plateau in 1874.

Dawson, 1965
Lawrence, 1967 (Ch)
Eade & van der Linden, 1977 (Bellona, Ch)

Chatham Rise*
The ridge-like eastern part of the New Zealand Plateau, extending from 100 km east of Banks Peninsula eastward for 1,400 km. The western half, from Pukaki Gap to the Chatham Islands is generally flat-topped at 200–400 m deep. The eastern half increases gradually in depth to about 3,000 m deep.

Position : 44°30'S – 42°30'S, 174°40'E – 168°00'W

Named after the Chatham Islands.

Fleming & Reed, 1951
Brodie & Pantin, 1960 (South Is, Ch)
Lawrence, 1967 (Ch)

Chetwode Hole*
A small enclosed basin on the inner continental shelf at the entrance to Admiralty Bay, Marlborough Sounds. The basin reaches a maximum depth of 130 m, the surrounding continental shelf ranging from 0 m to 70 m deep.

Position : 40°52'S, 174°07'E

Named after the adjacent Chetwode Islands which are only 1.5 km from the deepest part of the basin.

Brodie, 1966 (Cook Strait, Ch)
Mitchell & Lewis, 1980 (Cook Strait, Ch)

Columbia Bank
A NW-aligned shallow bank, west of Cape Reinga, cresting at 30 m after rising from 70 m deep.

Position : 34°26'S, 172°37'E

This name has been used following the nomenclature on the relevant hydrographic chart.

Mitchell & Eade, 1990 (Three Kings, Ch)

Colville Canyon

A NE–SW trending canyon to the northwest of Colville Knolls and southeast of Rakitu Canyon on the outer part of Bay of Plenty. It reaches a depth of 1,750 m.

Position : 36°10'S, 176°38'E

Name derived from Cape Colville on the nearby Coromandel Peninsula.

Wright, 1989 (Cuvier, Ch)

Colville Knolls

A group of knolls, at the extreme northeastern end of the Alderman Trough, in the northern Bay of Plenty. Crests at 800–850 m deep.

Position : 36°10'S, 176°45'E

Carter, 1976 (Cuvier, Ch)
Wright, 1989 (Cuvier, Ch)
Wright, 1990 (Havre Trough, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Colville Ridge*

Extends 300 km northeastwards from the lower continental slope off the Coromandel Peninsula. The crest is generally 1,000–2,000 m deep, the seabed on either side being about 3,000 m deep. A 2,500 m deep saddle separates it from the South Fiji Ridge to the north.

Position : 35°45'S – 32°30'S, 176°45'E – 179°00'E

Brodie & Hatherton, 1958
Brodie & Pantin, 1960 (North Is, Ch)
van der Linden, 1968 (Three Kings, Ch)
Wright, 1989 (Cuvier, Ch)
Wright, 1990 (Havre Trough, Ch)

Conway Ridge*

Extends from 20 km to 40 km due south of the Kaikoura Peninsula. Crest 120–130 m deep. Represents the outer part of the continental shelf incised by the Conway Trough, which is to landward.

Position : 42°41'S, 173°39'E

Named after the nearby Conway River.

Cullen & Brodie, 1966 (Pegasus, Ch)
Carter & Herzer, 1983 (Pegasus, Ch)

Conway Trough*

A steep-sided N–S trending depression incised into the continental shelf between 10 km and 40 km south of the Kaikoura Peninsula. Centre of trough ranges from 9 km to 15 km from shore. Increases in depth from 400 m in the south to 1,000 m deep in the north where it joins the Kaikoura Canyon.

Position : 42°40'S, 173°35'E

Carter 1982
Cullen & Brodie, 1966 (Pegasus, Ch)
Carter & Herzer, 1983 (Pegasus, Ch)

Cook Canyon*

Trends E–W on the continental shelf and slope off Westland. Extends from 50 m deep off the Cook River to 4,000 m deep where it joins the Cook Channel.

Position : 43°25'S – 43°50'S, 169·45'E – 166°30'E

Named after the Cook River.

Eade, 1972 (Hokitika, Ch)
van der Linden & Hayes, 1972 (Resolution, Ch)
Carter, 1981 (Jackson, Ch)

Cook Channel*

An apparent continuation of the Cook Canyon across the abyssal seafloor between the continental slope of Westland and the Gilbert Seamount Complex. It meanders northwestwards for 200 km between depths of 4,000 m and 4,500 m.

Position : 43°50'S – 42°00'S, 166°30'E – 165°00'E

Named after Cook Canyon.

van der Linden & Hayes, 1972 (Resolution, Ch)

Cook Strait Canyon*

A sinuous, much-branched canyon, generally trending NW–SE on the southeastern part of Cook Strait. Axis ranges in depth from about 200–2,500 m at the point where it joins the Hikurangi Trench.

Position : 41°37'S, 174°50'E

Pantin, 1963
van der Linden, 1968 (Cook, Ch)
Mitchell, 1988 (Campbell, Ch)
Mitchell & Lewis, 1980 (Cook Strait, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Courrejolles Slope*

A steeply inclined part of the continental slope

about 50 km northwest of Campbell Island.

Position : 52°15'S, 168°30'E

Named after Courrejolles Point on Campbell Island.

Cullen, 1971 (Campbell Is, Ch)

Cullen Seavalley

This N–S trending valley-like feature is on central Chatham Rise, west of Chatham Islands. It is as deep as 450 m and shallows at its northern end to 420 m.

Position : 43°36'S, 179°23'E

Name given for Dr David J. Cullen, NZOI geoscientist, for his work in the Chatham Rise Area.

Mitchell & Cullen, 1984 (Chatham Rise, Ch)

Dampier Ridge*

Trends N–S about midway between the coast of Australia and the crest of the Lord Howe Rise. Crest of the Dampier Ridge is generally between 2,000 m and 3,000 m deep. To the west there is the wide, 4,500–5,000 m deep Tasman Basin. To the east there are two relatively narrow basins, the 2,600–3,600 m deep Middleton Basin in the north, and the 4,000–4,500 m deep Lord Howe Basin in the south.

Position : 24°30'S – 34°00'S, 157°00'E – 158°30'E

Named after the 19th century British navigator and explorer.

van der Linden, 1967
van der Linden, 1968 (Lord Howe, Ch)
van der Linden, 1969 (Norfolk, Ch)

Devonport Seamount*

In the southwestern part of the South Fiji Basin. It rises from a depth of 4,000 m to a depth of 2,000 m.

Position : 31°33'S, 175°23'E

Named after the Royal New Zealand naval base Devonport, in Auckland,

van der Linden, 1968 (Three Kings, Ch)

Dolphin Spur

A SW-trending spur east of the Challenger Plateau and separated from the Plateau by the Bellona Trough. It crests in the north at 1,250 m, in the centre to 1,000 m, and at its southern end to 1,750 m.

Position : 38°15'S, 165°00'E

Origin of name unknown.

Eade & van der Linden, 1977 (Bellona, Ch)

Dolphin Seamount

A seamount on the eastern edge of the Tasman Basin and east of the Challenger Plateau. It crests at 2,500 m.

Position : 39°20'S, 163°25'E

Eade & van der Linden, 1977 (Bellona, Ch)

Double Knolls

One of a group of knolls at the northern end of the Alderman Trough in the outer Bay of Plenty region. These E–W aligned knolls have crests at 1,300 m rising from depths of 1,500 m.

Position : 36°34'S, 176°52'E

Given this name because of its configuration.

Wright, 1989 (Cuvier, Ch)

D'Urville Seavalley

In western Cook Strait extending from 60 km south of Cape Egmont, southeastward, past the entrances to the Marlborough Sounds, to the Narrows of Cook Strait. Increases in depth from 100 m at its northwestern end to 200 m at its southeastern end.

Position : 39°50'S – 40°53'S, 173°37'E – 174°30'E

Takes its name from nearby D'Urville Island.

Mitchell & Lewis, 1980 (Cook Strait, Ch)

East Cape Ridge*

Extends 150 km NNE from the mid-continental slope off East Cape. Crest is generally 1,000–1,500 m deep. It separates the 2,400 m deep Raukumara Plain from the 4,000–5,000 m deep Hikurangi Trench.

Position : 37°45'S – 36°00'S, 179°15'E – 179°45'W

Brodie, 1964
van der Linden, 1968 (Cook, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

East Ngatoro Knoll

The only one of a group of knolls in the Bay of Plenty area on the eastern side of the Tauranga Trough. It crests at a depth of 1,650 m.

Position : 37°03'S, 177°06'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

East Ridge

A ridge, almost due east off East Cape, on the outer continental shelf. It has two crests, 750 m at the northern end, and 700 m at the southern end.

Position : 37°42'S, 179°20'E

Not to be confused with East Cape Ridge.

Cullen, 1976 (East Cape, Ch)

Egmont Terrace*

A nearly flat area, at a depth of 250–300 m on the outer continental shelf west of Cook Strait. The shelf break at the Egmont Terrace is unusually deep and bulges westward towards the Challenger Plateau.

Position : 39°37'S, 172°05'E

Named after Cape Egmont (and Mt Egmont) on the adjacent land.

van der Linden, 1966 (Egmont, Ch)

Elingamite Channel

Runs SW–NE at a depth of about 200 m across the South Maria Ridge, extending from Cape Maria van Diemen in a northwesterly direction. This channel cuts off Three Kings Islands from the continental shelf.

Position : 34°16'S, 172°05'E

Named after the *Elingamite* which was wrecked on West King Island in 1902.

Bradford, 1969

Elizabeth Reef

This reef is about 500 km east of the New South Wales coast and north of Lord Howe Island in the Tasman Sea. It has a crest at about 100 m deep.

Position : 29°55'S, 159°02'E

van der Linden, 1968 (Lord Howe, Ch)
van der Linden, 1919 (Norfolk, Ch)
Monahan *et al.*, 1982 (Ch)
Kroenke *et al.*, 1983 (Ch)

Emerald Basin*

Lies between the Macquarie Ridge and the Campbell Plateau south of the Auckland Islands. Generally between 4,200 m and 4,800 m deep. To the north it merges into the Solander Trough.

Position : 54°29'S, 162°30'E

Named after Emerald Island which was reported to exist near the centre of the basin.

Summerhayes, 1966 (Pukaki, Ch)
Summerhayes, 1967 (Macquarie, Ch)

Endeavour Banks*

Isolated elevations on the southern part of the Subantarctic Slope about 400 km ESE of Campbell Island. The largest rises from a depth of between 3,800 m and 4,800 m to a depth of about 2,500 m.

Position : 53°30'S, 174°15'E

Named after the Antarctic supply vessel HMNZS *Endeavour*.

Summerhayes, 1966 (Pukaki, Ch)

Endeavour Rise*

A N–S trending elevation extending from near the base of the Subantarctic Slope east of Campbell Island southwards for 500 km into the Southwest Pacific Basin. Crest of the Rise generally between 3,500 m and 5,000 m deep, at many places only slightly above the adjacent 5,000–5,300 m deep basin.

Position : 52°00'S – 53°00'S, 176°00'E – 176°15'E

Lawrence, 1967 (Ch)

Enderby Channel*

Broad, sinuous depression in the Auckland Islands Shelf about 30 km northeast of the Auckland Islands. The depression increases in depth from 150 m to 180 m near the shelf break.

Position : 50°20'S, 166°40'E

Takes its name from nearby Enderby Island.

Summerhayes, 1967a
Summerhayes, 1967 (Auckland Is, Ch)

Fairway Trough

Lies between Lord Howe Rise and the Fairway–West Norfolk Ridge. It slopes gently from less than 2,000 m deep in the north, and in the south off the west coast of Northland, to a maximum depth of 3,550 in the centre.

Position : 25°00'S – 35°00'S, 165°00'E

Eade, 1988

Farewell-Egmont Rise Lewis & Eade, 1974

see **Farewell Rise**

Farewell Rise

Low, broad, elongate elevation projecting north from Cape Farewell towards Cape Egmont. It formed a "land bridge" between South Island and North Island during periods of low sea level.

Position : 39°30'S – 40°30'S, 173°50'E – 172°40'E

Takes its name from Cape Farewell.

Baldwin & Lewis, 1991 (Cook, Ch)

Fiordland Basin*

A shallow rise of the seafloor to less than 4,000–4,500 m deep, marking the western boundary of the enclosed basin at the foot of the continental slope off Fiordland. A large canyon extends southward towards Puysegur Bank. The northern part ends against a seaward extension of the continental slope. It trends parallel to, and 50 km from, the coast. Sill to the Tasman Basin is 550 m above the deepest part of the basin.

Position : 45°35'S, 165°45'E

Named after the area on adjacent land.

van der Linden & Hayes, 1972 (Resolution, Ch)

Fiordland Trough Brodie, 1964a

Brodie & Pantin, 1960 (South Is, Ch)

see **Fiordland Basin**

Fisherman's Pinnacle

At the northern entrance to the Narrows of Cook Strait. Rises from a depth of 300 m in the Narrows Basin to a summit at 10 m.

Position : 41°04'S, 174°36'E

Mitchell & Lewis, 1986 (Cook Strait, Ch)

Fisherman's Rock*

Brodie, 1966 (Cook Strait, Ch)

see **Fisherman's Pinnacle**

Flaxbourne Basin

An enclosed basin on the outer continental shelf off the east coast of Marlborough. About 40 m deeper than the surrounding, 130 m deep, continental shelf.

Position : 41°59'S, 174°20'E

Takes its name from the river on nearby land.

Mitchell, 1988 (Campbell, Ch)

Flaxbourne Depression*

Brodie, 1966 (Cook Strait, Ch)

see **Flaxbourne Basin**

Fleming Scarp

An area between the Mernoo Saddle to the west and Mernoo Bank to the east, south of the Hikurangi Trench, northeast of Banks Peninsula. Depths from 200 m to 500 m.

Position : 43°15'S, 174°45'E

Described by Sir Charles Fleming, former Chief Palaeontologist, N.Z. Geological Survey.

Fleming & Reed, 1951

Herzer, 1977 (Mernoo, Ch)

Flinders Seamount*

On the western slope of the Lord Howe Rise, 300 km south of Lord Howe Island. Rises from a depth of about 2,800 m to a summit at about 1,700 m.

Position : 34°40'S, 159°44'E.

Named after the 19th century British navigator, Matthew Flinders.

van der Linden, 1968 (Lord Howe, Ch)

Foulwind Canyon

A wide, flat-floored area, with a bottom depth of 1,000 m offshore from west coast South Island.

Position : 41°55'S, 169°40'E

Named after Cape Foulwind on adjacent land.

Norris, 1979 (Foulwind, Ch)

Gable High*

Pantin, 1963

Pantin, 1963 (Mahia, Ch)

see **Gable Ridge**

Gable Ridge

On the upper continental slope 60 km east of Gisborne. Trends parallel with the coast. Rises to a minimum recorded depth of 630 m.

Positon : 38°31'S, 178°49'E

Name taken from the nearby Gable End Foreland.

Arron & Lewis, 1991 (Mahia, Ch)

Gable Trough

A trough about 15 km long, aligned NNE–SSW and 950 m deep, between the continental slope to the west and Gable Ridge to the east.

Position : 38°36'S, 178°43'E

Arron & Lewis, 1991 (Mahia, Ch)

Gazelle Basin

An area between New Caledonia and the Kermadec Islands with a maximum depth of 7,500 m.

Position : 31°00'S, 169°00'E

Named after the German naval exploration ship *Gazelle* under the command of von Schleinitz who determined the existence of a basin here in 1875.

Fairbridge, 1962

Gifford Guyot*

East of Brisbane 600 km on the western flank of the Lord Howe Rise. Rises from depths of between 2,300 m and 3,300 m to a minimum recorded depth of 289 m. Belongs to the Lord Howe Island Seamount Chain.

Position : 26°40'S, 159°25'E

Named after the wife of H.W. Menard, leader of the 1967 Scripps Institution of Oceanography "Nova" Expedition.

Menard, 1968 (Ch)
Connolly, 1969
Kroenke *et al.*, 1983 (Ch)

Gifford Tablemount

NZ4602 (Ch)

see **Gifford Guyot**

Gilbert Seamount Complex*

A group of seamounts in the Tasman Basin, 300 km west of Fiordland. They rise from depths of about 4,600 m to about 2,400 m.

Position : 43°00'S, 164°00'E

Named after Joseph Gilbert, commander of HMS *Resolution*, 1772–1775.

van der Linden & Hayes, 1972 (Resolution, Ch)

Gisborne Knolls

Two knolls, lying parallel to the coast, 100 km ESE off Gisborne, rising from a depth of 3,500 m to a minimumof 2,750 m.

Position : 38°57'S – 38°46'S, 179°15'E – 179°28'E

Takes its name from the city on adjacent mainland.

Baldwin & Lewis, 1991 (Cook, Ch)

Gisborne Sea Valley*

Trends W–E off the central part of the continental slope between 40 km and 70 km east of Gisborne. Axis ranges in depth from 750 m to 2,500 m.

Position : 38°45'S, 178°45'E

Pantin, 1963
Pantin, 1963 (Mahia, Ch)

Glendhu Ridge

Trends NE–SW on the lower continental slope off the Wairarapa coast. Crest at depths of 1,800 m rising from 2,250 m above the Glendhu Trough to landward.

Position : 41°42'S, 176°15'E

Named after the locality on the adjacent land.

Mitchell, 1988 (Palliser, Ch)

Glendhu Trough

Trends NE–SW on the lower continental slope off the Wairarapa coast. Has a broad floor at a depth of 3,100 m.

Position : 41°40'S, 176°10'E

Mitchell, 1988 (Palliser, Ch)

Gobey Bank

A NE-trending bank on the southern side of

North Maria Ridge, north of Three Kings Trough.

Position : 33°43'S, 171°50'E

This name has been used following the nomenclature on the relevant hydrographic chart.

Mitchell & Eade, 1990 (Three Kings, Ch)

Graham Bank

A bank on the shallow shelf at 25 m, in the South Taranaki Bight, south of Patea.

Position : 39°54'S, 174°26'E

Origin of name unknown.

Brodie, 1969 (Patea, Ch)

Haast Canyon*

Winds from the outer continental shelf off the Haast River of Westland to the Tasman Basin 250 km to the southwest. Axis ranges in depth from about 200 m to 4,600 m.

Position : 44°00'S – 41°50'S, 167°55'E – 166°00'E

Named after the area on the adjacent land.

van der Linden & Hayes, 1972 (Resolution, Ch)
Carter, 1981 (Jackson, Ch)

Haast Sea Valley Brodie, 1964a
see **Haast Canyon**

Hasselborough Ridge*

On the western flank of the Macquarie Ridge, 10–12 km to the northwest of Macquarie Island. Merges with the Macquarie Ridge at its northern end. Crest generally between 100 m and 200 m deep.

Position : 54°27'S, 158°49'E

Named after Hasselborough Bay, Macquarie Island.

Cullen, 1970 (Macquarie Is, Ch)

Hauraki Canyon*

Cuts into the continental slope between 25 km and 75 km NNE of Great Barrier Island. Curves around the western and northern sides of Barrier Bank. Extends from about 200 m deep to the Hauraki Trough at 2,000 m deep.

Position: 35°20'S, 175°35'E

Takes its name from the adjacent Hauraki Gulf.

Eade, 1971 (Poor Knights, Ch

Hauraki Ridge*

A line of banks extending from the foot of the continental slope off the Bay of Islands, northwestward for 200 km. Lies between the Hauraki Trough to the southwest and the South Fiji Basin to the northeast. Rises from a surrounding depth of about 3,500 m to a depth of about 2,000 m at the tops of the banks.

Position : 34°25'S – 32°55'S, 175°20'E – 177°20'E

Brodie, 1964a

Hauraki Trough*

A line of irregular basins extending from the foot of the continental slope off the Hauraki Gulf, northwestwards for 250 km. Lies between the Colville Ridge to the southeast and the Hauraki Ridge to the northwest. Generally between 3,000 m and 3,300 m deep.

Position : 35°00'S – 32°30'S, 176°30'E – 178°30'E

Brodie, 1964a

Hauturu Ridge

On the southern side of the Ngatoro Basin (outer eastern Hauraki Gulf) at its northern end, this NE–SW aligned ridge rises from depths at 2,650 m to crest at 2,300 m.

Position : 36°31'S, 177°18'E

Given the Maori name for Little Barrier Island.

Wright, 1989 (Cuvier, Ch)

Havre Depression*

van der Linden, 1968 (Three Kings, Ch)
see **Havre Trough**

Havre Trough

A 2,500–4,000 m deep, irregularly floored, discontinuous trough approx. 112 km wide, extending from the foot of the continental slope off the Bay of Plenty, towards the NNE for 1,000 km. More than 2,740 m deep in the south with a maximum depth at

latitude 32°45'S of over 3,650 m. Between 30°S and 32°S the trough is ill-defined. The northern portion is more than 2,280 m deep with a maximum of over 2,740 m at latitude 27°30'S.

Position : 36°05'S – 25°S, 177°20'E – 178°15'W

Named after the Havre Rocks at the southern end of the Kermadec Islands; they are the nearest land to the mid-point of the depression.

Brodie & Hatherton, 1958
Wright *et al.*, 1990
Brodie & Pantin, 1960 (North Is, Ch)
Wright, 1990 (Havre Trough, Ch)

Hawke Seavalley*

Trends southeastward on the upper continental slope off Hawke Bay. Axis extends from a depth of 200 m to a depth of 1,000 m.

Position : 39°38'S, 177°55'E

Name taken from nearby Hawke Bay.

Pantin, 1963
Pantin, 1963 (Mahia, Ch)
Lewis, 1976 (Turnagain, Ch)
Arron & Lewis, 1991 (Mahia, Ch)

Heaphy Sea Valley

Trends N–S offshore of the continental shelf, northwestern South Island. Reaches a depth of 400 m at its northern end.

Position : 40°40'S, 171°31'E

Named after the river on the adjacent mainland, which in turn was named after Charles Heaphy, who explored many parts of the area.

Norris & van der Linden, 1972 (Karamea, Ch)

Heemskirk Seamount

A seamount in the northern Tasman Basin cresting at 3,000 m.

Position : 36°15'S, 159°25'E

Named after Abel Tasman's ship *Heemskerck.*

Eade & van der Linden, 1977 (Bellona, Ch)

Herekino Bank

A small bank cresting at 650 m offshore of the continental shelf, in the Tasman Sea, west of northern New Zealand.

Position : 35°15'S, 172°87'E

Takes its name from the area on the adjacent mainland.

Irwin & Eade, 1984 (Hokianga, Ch)

Hikunui Ridge

A NE–SW aligned ridge with a crest at its northern end of 2,150 m and at its southern end of 1,300 m. It lies between the Hikunui Seavalley to the north and the Ngatoro Basin to the south, in the outer Hauraki Gulf/Bay of Plenty region.

Position : 36°35'S, 177°00'E.

Named after Hikunui Island, eastern Coromandel Peninsula.

Wright, 1989 (Cuvier, Ch)

Hikunui Seavalley

A NE–SW aligned valley between a group of knolls to the north and the Hikunui Ridge to the south. Its floor can be as deep as 2,450 m at its northern end.

Position : 36°32'S, 177·00'E

Wright, 1989 (Cuvier, Ch)

Hikurangi Channel

This channel is incised on the bottom of the 2,500–3,000 m deep Hikurangi Trough. It is flat-floored, at least 500 km long, and up to 10 km wide with levees 250 m deep. It extends northeast from the Kaikoura Canyon at the northern end, trending northeast along the toe of the Marlborough coast to the mouth of the Cook Strait Canyon, and then swings eastward along the base of the North Chatham Slope, east off the Palliser coast. It then meanders northeast roughly parallel to the east coast continental slope, at least as far as Mahia Peninsula.

Position : 39°10'S – 42°35'S, 179°12'E – 174°00'E

Barnes, 1990
Baldwin & Lewis, 1991 (Cook, Ch)

Hikurangi Trench* Brodie & Hatherton, 1958
see **Hikurangi Trough**

Hikurangi Trough

A NE–SW trending trough between the continental slope on the eastern side of North Island and the Chatham Rise. Its axis extends from 35 km off the Kaikoura Peninsula, northwestward for 500 km to a point about 150 km off Mahia Peninsula. Gradually increases in depth from 2,200 m to 3,500 m.

Position : 41°00'S – 41°30'S, 177°00'E – 177°55'E

Named after Mt Hikurangi near East Cape.

van der linden, 1968 (Cook, Ch)
Lewis, 1976 (Turnagain, Ch)

Hinemoa Seamount*

In the Southwestern Pacific Basin east of the Kermadec Trench and about 500 km northeast of East Cape. Rises from a surrounding depth of 5,000 m to a minimum depth of less than 500 m.

Position : 35°15'S, 176°10'W

Named after the NZGS *Hinemoa* which was used for lighthouse and shipwreck relief around New Zealand from 1876 to 1922.

Lawrence, 1967 (Ch)

Hjort Trough*

To the west of, and parallel with, the Macquarie Ridge. Extends from about 300 km to about 600 m south of Macquarie Island. Axis generally more than 6,000 m deep reaching a maximum depth of 6,725 m, being 1,000–2,000 m deeper than the Tasman Basin to the west, and about 4,000 m deeper than the Macquarie Ridge to the east.

Position : 58°45'S, 157°20'E

Named after the Norwegian oceanographer, Johan Hjort.

Known as Hjort Trench in IHO/IOC (1988).

Summerhayes, 1967 (Macquarie, Ch)

Hokianga Terrace

A plateau-like area with a crest at 350 m depth offshore of the shelf edge in the Tasman Sea, northwest New Zealand.

Position : 35°40'S, 173°00'E

Named after the area on the nearby coast.

Irwin & Eade, 1984 (Hokianga, Ch)

Hokianga Canyon•

Incised into the continental shelf and slope off Hokitika, Westland. Extends from a depth of 50 km, at 12 km from shore, westward to a depth of 3,000 m at 300 km from shore.

Position : 42°00'S – 42°46'S, 170°43'S – 167°00'E

Takes its name from the town and harbour on the nearby coast.

Brodie, 1964a
Krause & Cullen, 1970 (Bounty, Ch)
Eade, 1972 (Hokitika, Ch)

Honeycomb Canyons*

Two parallel canyons incised into the continental shelf and slope and upper continental slope off the Wairarapa coast. Extend from a depth of 50 m, at 4 km from shore, southeastward for 25 km to a depth of 1,600 m. Each canyon widens near its head.

Position : 41°22'S, 175°55'E

Named after the Honeycomb Rocks on the adjacent land.

Pantin, 1963
Pantin, 1963 (Palliser, Ch)

Honeycomb High*

Pantin, 1963
Pantin, 1963 (Palliser, Ch)

see **Honeycomb Ridge**

Honeycomb Ridge

At the foot of the continental slope 60 km off the Wairarapa coast. Trends NE–SW, parallel with the coast. Rises about 150 m above the saddle to landward to a summit at a depth of about 2,300 m.

Position : 41°45'S, 176°16'E

Pantin, 1963
Pantin, 1963 (Palliser, Ch)
Mitchell, 1988 (Palliser, Ch)

Honeycomb Trough

A depression between two ridges, Glendhu to the north and Honeycomb to the south. Descends to a depth of 2,500 m.

Position : 41°44'S, 176°15'E

Mitchell, 1988 (Palliser, Ch)

Hoopers Canyon*

On the upper continental slope between 30 km and 70 km southeast of the Otago Peninsula. Ranges in depth from 200 m to 1,300 m and leads into the Centre Channel of the Bounty Trough.

Position : 46°07'S, 171°00'E

Named after Hoopers Inlet on Otago Peninsula.

Brodie, 1970 (Otago, Ch)
Carter, 1986 (Otago, Ch)

Hoopers Channel

One of the channels at the western end of the Bounty Trough, a tributary of the Bounty Channel. Forms at the confluence of several canyons at the foot of the steep upper continental slope, 70 km southeast of the Otago Peninsula. Extends eastwards for 150 km.

Position : 46°20'S, 171°35'E

Carter, 1986 (Otago, Ch)

Hornibrook Ridge

A N–S trending ridge with four shallow areas cresting at 385–390 m depth on the central Chatham Rise, west of Chatham Islands. It rises from a depth of 405 m.

Position : 42°29'S, 179°25'E

Given this name after N. de B. Hornibrook, palaeontologist, then of N.Z. Geological Survey.

Mitchell & Cullen, 1984 (Ch)

Horoera Ridge

A ridge with a knoll-like summit cresting at 1,450 m northeast from East Cape Peninsula. The ridge trends W–E deepening sharply from its summit.

Position : 37°18'S, 179°16'E

Named after the settlement on the mainland which is a variant of Horoeka, the New Zealand lancewood.

Cullen, 1977 (East Cape, Ch)

Hurunui Canyon

Incised into the continental slope off northern Canterbury, it extends northeastwards to the southern end of the Hikurangi Trough. Extends from a depth of about 200 m to 1,000 m depth.

Position : 42°57'S, 173°45'E

Name taken from the settlement and river on the nearby land in the north of Pegasus Bay.

Herzer & Carter, 1983 (Pegasus, Ch)

Jackson Canyon

A deep canyon with depths of about 1,600 m incised into the continental shelf, off Westland.

Position : 43°55'S, 168°27'E

Name derived from Jackson Head on the nearby land.

Carter, 1981 (Jackson, Ch)

Jacksons Hole*

A deep enclosed basin at the entrance to Port Gore in the Marlborough Sounds. Maximum depth 280 m at a position 3 km northeast of Cape Jackson. The continental shelf to seaward is about 120 m deep.

Position : 40°58'S, 174°20'E

Named after the closest land, Cape Jackson.

Brodie, 1966 (Cook Strait, Ch)
Mitchell & Lewis, 1980 (Cook Strait, Ch)

Johnson Trough

A NE–SW aligned trough south of the Three Kings Islands. It has two bights either side, cresting to 120 m on its northwestern side, and 100 m on the southeastern side. Trough depth is about 350 m.

Position : 34°15'S, 172°09'E

New name for Elingamite Channel.

Named for Commander G.B.W. Johnson, HMNZS *Lachlan,* the vessel that carried out surveys in the area.

Eade, 1988 (Three Kings Shelf, Ch)
Mitchell & Eade, 1990 (Three Kings, Ch)

Kahurangi Shoals*

An area of irregular topography on the inner continental shelf off northwest Nelson, between 10 km and 15 km from shore. Rises from about 70 m

to break surface at Stewart Rock.

Position : 40°40'S, 172°11'E

Named after the nearby Kahurangi Point.

Brodie, 1965 (Tasman Ch)
Mitchell, 1986 (Tasman, Ch)

Kahutara Ridge*

Cullen & Brodie, 1966 (Pegasus, Ch)
see **Kahutara Spur**

Kahutara Spur

On the upper continental slope between 10 km and 20 km SSE of the Kaikoura Peninsula. Forms the eastern boundary of the Kaikoura Canyon. Crest at a depth of about 900 m.

Position : 42°32'S, 173°45'E

Name derived from the nearby Kahutara River and Point.

Herzer & Carter, 1983 (Pegasus, Ch)

Kaikoura Canyon*

Incised into the continental shelf and upper continental slope between 8 km and 20 km south of the Kaikoura Peninsula. Its head reaches within 1 km of the shore. Its axis ranges in depth from 1,000 m to 1,700 m merging into the flank of the Hikurangi Trough at its lower end. Its upper half, about 14 km long, trends W–E, and its lower half trends almost N–S.

Position : 42°33'S, 173°43'E

Name taken from the township on adjacent land.

Krause, 1966
Cullen & Brodie, 1966 (Pegasus, Ch)
Krause & Cullen, 1970 (Bounty, Ch)
Carter & Herzer, 1983 (Pegasus, Ch)

Kaingaroa Bank*

On the North Chatham Slope, 42 km southeast of the Chatham Islands. Rises from a depth of 300–350 m to a depth of 170 m.

Position : 43°22'S, 176°00'W

Named after Kaingaroa Harbour on Chatham Island.

Cullen, 1967 (Chatham Is, Ch)

Kaipara Canyon

A NE–SW trending indentation off the continental shelf, northwest of North Island, in the Tasman Sea, 200–1,100 m depth.

Position : 36°44'S, 173°48'E

Name taken from the area on adjacent mainland.

Irwin & Eade, 1984 (Kaipara, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Kaipara Channel

An indentation offshore of northwest New Zealand similar to the adjacent Kaipara Canyon, with depths of from 1,350 m to 1,600 m.

Position : 36°48'S, 173°10'E

Irwin & Eade, 1984 (Kaipara, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Kaiwhata Bank*

On the upper continental slope 20 km off the Wairarapa coast. Trends NE–SW parallel with the shore. Rises to a depth of 430 m from a surrounding seafloor that is about 1,000 m deep.

Position : 41°19'S, 176°13'E

Named after the nearby Kaiwhata River.

Pantin, 1963
Pantin, 1963 (Palliser, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)
Mitchell, 1988 (Palliser, Ch)

Kapiti Seavalley

Trends NE–SW parallel to the adjacent island and continental shelf. Valley floor at 100–150 m.

Position : 40°55'S, 174°50'E

Name taken from adjacent Kapiti Island.

Mitchell & Lewis, 1980 (Cook Strait, Ch)

Kapukairo Knoll

A NE–SW aligned knoll with a crest at about 1,100 m rising from a seafloor depth of 1,350 m.

Position : 37°01'S, 176°54'E

Named after Kapukairo Trig, immediately east of Tauranga, on the mainland.

Wright, 1989 (Bay of Plenty, Ch)

Karetu Canyons*

On the southwestern flank of the Maria Ridge, ranging from 15 km to 50 km southwest of Three Kings Islands. Extending from a depth of 200 m to a depth of 800 m.

Position : 34°25'S, 171°45'E

Named after the settlement on adjacent mainland.

Summerhayes, 1969b

Karetu Seavalleys

Southwest of Three Kings Islands and west of Cape Reinga these valleys reach depths of 1,000 m in the north and 1,350 further south.

Position : 34°25'S, 171°25'E

Mitchell & Eade, 1990 (Three Kings, Ch)

Karetu Trough

A NE–SW trending narrow trough separating Three Kings Plateau, North and South Maria Ridges in the north and the Reinga Shelf in the south.

Position : 34°00'S, 172°30'E

Nelson *et al.*, 1982

Karitane Canyon*

Incised into the outer continental shelf and upper continental slope about 30 km northeast of the Otago Peninsula. Extends from a depth of about 80 m to a depth of about 1,000 m. Forms one of the tributaries of the North Channel of the Bounty Trough.

Position : 45°38'S, 17110'E

Name taken from the settlement on the adjacent coast.

Brodie, 1970 (Otago, Ch)
Carter & Carter, 1981 (Oamaru, Ch)
Carter, 1986 (Otago, Ch)

Karitane Channel

Aligned W–E further offshore from Karitane Canyon. Floor depth as deep as 1,700 m. Appears to be the southern tributary which flows northwards into the North Bounty Channel.

Position : 45°45'S, 171°45'E

Carter & Carter, 1981 (Oamaru, Ch)

Kaukau Bank*

On the continental shelf 3 km offshore from the Wairarapa coast and 10 km northeast of Cape Palliser. Trends NE–SW and rises to a minimum depth of 30 m. Separated from the shelf to landward by a 40 m deep saddle.

Position : 41°36'S, 175°29'E

Named after Te Kaukau Point on the adjacent mainland.

Pantin, 1963
Pantin, 1963 (Palliser, Ch)
Mitchell, 1988 (Campbell, Ch)

Kawitihu Seamounts

A group of four seamounts (one of which is the West Kawitihu Seamount) within an area of 500 km^2 in the southern Havre Trough.

Position : 36°05'S, 177°23'E

Named after the settlement on the adjacent land in coastal Bay of Plenty.

Wright, 1990 (Havre Trough, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Kekerengu Bank

A bank cresting to 700 m depth on the continental slope, due south of Cape Campbell rising from seafloor depths of 1,450 m.

Position : 42°15'S, 174°21'E

Named after the locality, due west on the land. Name means "black beetle" commonly known as "Maori bug".

Mitchell, 1988 (Campbell, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Kelso Bank*

On the western flank of the Lord Howe Rise about midway between Brisbane and Noumea. One of the Lord Howe Island Seamount Chain. Rises to 18 m from a surrounding depth of between 1,500 m and 2,500 m.

Position : 24°05'S, 159°30'E

Named after the troopship *Kelso* which was stranded on Kelso Reef in 1842.

Standard, 1961
van der Linden, 1969 (Norfolk, Ch)

Kermadec Ridge*

To the west of the Kermadec Trench it extends from 200 km off the Bay of Plenty northeastward for 900 km. Less than 2,000 m deep at its crest being shallowest in the middle where it is emergent at the Kermadec Islands. Separated from the Tonga Ridge by a 2,000 m deep saddle at 26°30'S.

Position : 26°30'S – 36°00'S, 179°00'E, 177°30'W

Named after the Kermadec Islands.

Fleming, 1951
Brodie & Pantin, 1960 (North Is, Ch)
Lawrence, 1967 (Ch)
van der Linden, 1968 (Three Kings, Ch)

Kermadec Trench*

Extending from 90 km offshore from Gisborne, where it is 3,600 m deep, northeastward for 1,300 km to latitude 26°S. It reaches a maximum depth of 9,995 m near the Kermadec Islands. Separated from the Tonga Trench to the north by a 6,000 m deep sill.

Position : 26°00'S – 39°00'S, 179°00'E – 175°00'W

Fleming, 1951
Brodie & Pantin, 1960 (North Is. Ch)
Lawrence, 1967 (Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

King Bank

Isolated, flat-topped bank at continental shelf depths, about 15 km northwest of Three Kings Islands on the North Maria Ridge. Has a shelf break ranging from 139 m to 168 m deep.

Position : 33°57'S, 172°17'E

This name has been used following the nomenclature on the relevant hydrographic chart.

Mitchell & Eade, 1990 (Three Kings, Ch)

Kingston Basin*

On the eastern flank of the Norfolk Ridge about 140 km northeast of Norfolk Island. Maximum depth about 4,000 m.

Position : 28°00'S, 169°00'E

Name taken from a settlement on Norfolk Island.

van der Linden, 1967
van der Linden, 1969 (Norfolk, Ch)

Kiwi Seamount*

On the slope between the Three Kings Rise and the South Fiji Basin, 400 km north of North Cape. Rises from depths of 3,000–3,500 m to about 700 m deep.

Position : 30°43'S, 173°54'E

Named after the minesweeper HMNZS *Kiwi*.

Barker & Kibblewhite, 1965
van der Linden, 1968 (Three Kings, Ch)
Terrill & Packham, 1974

Knights Terrace*

A flat area at a depth of about 600 m on the continental slope 50 km northeast of the Poor Knights Islands.

Position : 35°02'S, 175°10'E

Name derived from the adjacent islands.

Eade, 1971 (Poor Knights, Ch)

Koamaru Hole*

A small, but deep, enclosed basin at the entrance to Queen Charlotte Sound, in the Marlborough Sounds. Reaches a depth of about 200 m. The surrounding seabed ranges in depth from 0 m to 100 m. Depth of nearly 200 m occurs only 1 km offshore.

Position : 41°04'S, 174°23'E

Brodie, 1966 (Cook Strait, Ch)
Mitchell & Lewis, 1980 (Cook Strait, Ch)

Koruenga Knoll

One of a group of knolls at the northern end of the Alderman Trough in the outer Bay of Plenty region. It rises from a seafloor depth of 1,800 m to crest at about 1,150 m.

Position : 36°27'S, 176°52'E

Wright, 1989 (Cuvier, Ch)

Koutunui Ridge

A SE-trending ridge on the outer continental slope off East Cape Peninsula. There are two crests (300 m and 350 m) at the northern end, and another (600 m) at the southern end.

Position : 38°06'S, 178°57'E

Name taken from Koutunui Head on the mainland.

Cullen, 1976 (East Cape, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Kowhai Sea-valleys*

On the continental slope between 8 km and 25 km southeast of the Kaikoura Peninsula; extends from the 90 m deep shelf break to the flank of the Hikurangi Trough at a depth of about 1,700 m.

Position : 42°30'S, 173°55'E

Named after the nearby Kowhai River.

Cullen & Brodie, 1966 (Pegasus, Ch)
Carter & Herzer, 1983 (Pegasus, Ch)

Kudrass Knoll

This flat area at 370 m depth trends N–S on the central Chatham Rise, west of the Chatham Islands.

Position 43°28'S, 179°15'E

Named for Herman T. Kudrass, scientist aboard RV *Sonne*, the vessel from which this feature was discovered.

Mitchell & Cullen, 1984 (Ch)

Kupe Abyssal Plain

A large expanse in the southern part of the South Fiji Basin sloping gently towards the north. Water depth is 4,000–4,300 m.

Position : 31°00'S, 176°30'E

Named after the Maori who discovered New Zealand about 983 AD.

Packham & Terrill, 1975
Terrill & Packham, 1974 (Ch)

Lachlan Banks*

On the outer continental shelf off Hawke Bay, 40 km east of Cape Kidnappers. Rises from a depth of about 150 m to a minimum recorded depth of 90 m.

Position : 39°39'S, 177°34'E

Named after the hydrographic survey vessel HMNZS *Lachlan* from which the banks were discovered.

Pantin, 1963, 1966
Pantin, 1966 (Mahia, Ch)
Lewis, 1976 (Turnagain, Ch)

Lachlan Depression

An area of lower seabed surface offshore of Cape Kidnappers between the mainland and Lachlan Ridge.

Position : 39°30'S, 177°30'E

Lewis, 1973a

Lachlan Ridge*

Irregular topography on the outer continental shelf off Hawke Bay. Trends southwestwards, from a point about 15 km south of Mahia Peninsula, for a distance of about 25 km. It has relief of about 30 m above 100 m to 140 m deep seabed.

Position : 39°33'S, 177°45'E

Pantin, 1963, 1966
Pantin, 1966 (Mahia, Ch)
Lewis, 1976 (Turnagain, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Lachlan Shoals*

On the inner continental shelf at the eastern end of Foveaux Strait between Ruapuke Island and Stewart Island. Rises from depths of 25 m to a minimum of 8 m.

Position : 46°49'S, 168°21'E

Cullen, 1965

Lau Basin

The name now used for Lau Trough.

Lau Trough

A shallow area between the Lau Ridge to the west and the Tonga Ridge to the east, which is aligned N–S.

Position : 27°00'S, 179°00'W

Name derived from the Fijian group of Lau Islands.

Packham & Terrill, 1975

Lavaud Sea Valleys

Southeast of Banks Peninsula this feature reaches depths of 1,000 m on the outer continental slope.

Position : 44°35'S, 173°55'E

Herzer, 1977 (Banks, Ch)

Lord Howe Basin*

A 4,000–4,500 m deep, NNW–SSE trending depression separating the southern part of the Dampier Ridge from the Lord Howe Rise.

Position : 32°30'S, 159°00'E

van der Linden, 1967
van der Linden, 1968 (Lord Howe, Ch)
Kroenke *et al.*, 1982 (Ch)

Lord Howe Guyots

Various banks and seamounts north of the Dampier Ridge.

Position : 22°00'S – 32°00'S, 159°00'E

Dubois *et al.*, 1974

Lord Howe Island Seamount Chain*

A N–S trending chain of seamounts, guyots, reefs, and islands on the western flank of the Lord Howe Rise. Includes, from north to south, Nova Bank, Argo Bank, Kelso Bank, Capel Bank, Gifford Seamount, Middleton Reef, Elizabeth Reef, Lord Howe Island, and Balls Pyramid.

Position : 22°00'S – 32°00'S, 159°00'E

Known as Lord Howe Seamount Chain in IHO/IOC (1988).

Menard, 1968 (Ch)

Lord Howe Rise*

The major elevation in the Tasman Sea. Its northern part trends N–S about midway between northern New Zealand and eastern Australia. Its southern part, south of Lord Howe Island, trends NW–SE. Its northern limit is at the edge of the Coral Sea; its southern limit is the foot of the New Zealand continental slope west of Cook Strait. Its crest is generally between 800 m and 1,400 m deep and is over 2,000 km long. It includes two shallow plateaus, one at its northern end, the Bellona Plateau, and one at its southern end, the Challenger Plateau.

Position : 19°00'S – 40°'00'S, 159°00'E – 171°00'E

Named after Lord Howe Island. The island was named after Earl Howe (Richard Howe), First Sea Lord of the Admiralty (1783) and Knight of the Garter (1797). He died in 1799.

Brodie, 1952
Lawrence, 1967 (Ch)
van der Linden, 1967
van der Linden, 1968 (Lord Howe, Ch)

Lord Howe Seamount Chain

A N–S trending series of of seamounts on the western flank and north of Lord Howe Island.

Position : 24°00'S – 30°00'S, 158°30'E – 160°00'E

Carter, 1980 (Ch)

Lottin Ridge

A SE–trending ridge with a crest at 1,400 m depth generally reaching 1,250 m at its southernmost end, north of the East Cape Peninsula.

Position : 37°16'S, 178°14'E

Named after the adjacent Lottin Point on the headland of East Cape which was so named for M. Lottin of D'Urville's staff.

Cullen, 1977 (East Cape, Ch)

Louisville Ridge*

In the South Pacific Basin, about 500 km east of the Kermadec Islands. Trends NW–SE; if continued northwestwards it would converge with the Kermadec Trench near Ozbourn Seamount. Crest is at depths of between 2,000 m and 3,000 m, about 300 m above the surrounding abyssal basin.

Position : 30°00'S – 32°30'S, 173°30'W – 171°30'W

Named after the cruiser USS *Louisville*.

Menard, 1968 (Ch)
Mammerickx *et al.*, 1971 (Ch)
Carter, 1980 (Ch)

Macquarie Ridge*

Extends southwards for 1,500 km from the continental slope off Fiordland to the triple junction

between Macquarie Ridge, Pacific–Antarctic Ridge, and Indian–Antarctic Ridge. Crest is very irregular being 400 m above sea level at Macquarie Island and 4,000 m below sea level 130 km north of Macquarie Island.

Position : 47°00'S – 61°00'S, 166°00'E – 158°00'E

Takes its name from Macquarie Island.

Brodie & Dawson, 1965
Summerhayes, 1967 (Macquarie, Ch)
Summerhayes, 1967 (Auckland, Ch)
Lawrence, 1967 (Ch)
Cullen, 1970 (Macquarie Is, Ch)

Macquarie Trough*

Trends N–S, 20 km east of Macquarie Island. Axis 5,000–5,500 m deep, 500–1,000 m deeper than Emerald Basin to the east and about 5,000 m deepr than the Macquarie Ridge to the west.

Position : 54°00'S – 55°00'S, 159°30'E – 159°00'E

Summerhayes, 1967 (Macquarie, Ch)

Madden Banks

see **North Madden Bank**
South Madden Bank

Madden Basin

Resembles an amphitheatre, 25 km in diameter, incised into the continental shelf and slope between 15 km and 40 km offshore from southern Hawkes Bay Land District. Has steep, channelled sides and an almost flat floor at a depth of 1,400 m, representing an expanded head of the Madden Canyon.

Position : 40°28'S, 177°03'E

Named after Sir Charles Madden, Chief of N.Z. Naval staff from 1953 to 1955.

Lewis, 1976 (Turnagain, Ch)

Madden Canyon*

On the continental slope between about 40 km and 70 km offshore from southern Hawkes Bay Land District. Steep sided where it separates the North Madden Bank from the South Madden Bank. Leads from the Madden Basin to the Porangahau Basin.

Position : 40°30'S – 40°40'S, 177°05'E – 177,20'E

Pantin, 1963
Pantin, 1963 (Turnagain, Ch)
Lewis, 1976 (Turnagain, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Madden Channel

This channel is the gentle-sided lower part of the Madden Canyon as deep as 2,000 m.

Position : 40°39'S, 177°20'E

Lewis, 1976 (Turnagain, Ch)

Madden Depression* Pantin, 1963
Pantin, 1963 (Turnagain, Ch)

see **Madden Basin**

Madden Ridge

A NE-trending ridge, which has at its northern end the North Madden Bank, and at the southern end, South Madden Bank. This ridge is dissected by the southwest section of the Madden Canyon. The crest of the ridge, not including the Banks, is 500 m deep.

Position : 40°22'S – 30°35'S, 177°10'E – 177°02'E

Lewis, 1976 (Turnagain, Ch)

Maha Knoll

A small rise cresting at about 400 m to the northwest of the White Island Ridge in the outer Bay of Plenty region.

Position : 37°24'S, 177°00'S

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Mahia Depression*

Trends NE–SW on the continental slope 50 km southeast of Mahia Peninsula. Floor at a depth of 1,000 m. Limited to the southeast by the Ritchie Banks.

Position : 39°40'S, 178°15'E

Named after the adjacent Mahia Peninsula.

Pantin, 1963
Pantin, 1963 (Mahia, Ch)

Mahia High* van der Linden, 1968 (Cook, Ch)
see **Mahia Seamount**

Mahia Seamount
An isolated elevation in the Hikurangi Trough 110 km ESE of Mahia Peninsula. Rises from a depth of 3,300 m to about 2,400 m.

Position : 39°40'S, 179°15'E

Baldwin & Lewis, 1991 (Cook, Ch)

Mahina Knoll
A knoll cresting at 300 m to the northwest of the White Island Ridge in the outer Bay of Plenty region. Has a central crater, 1.5 km across and 150 m deep, and is considered to be volcanic.
Position : 37°21'E, 177°06'E

Lewis & Pantin, 1984
Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Main Knoll
A small knoll trending W–E on central Chatham Rise, west of the Chatham Islands. Rises from depths of about 405 m to a crest at 385 m depth.

Position : 43°32'S, 179°37'E

Named for William deL. Main, NZOI staff member on cruise discovering this feature.

Mitchell & Cullen, 1984 (Ch)

Maria Ridge*
Extends from 40 km to 140 km northwestwards from Cape Reinga. Consists of two parallel ridges about 35 km apart; a main South Maria Ridge and a relatively short North Maria Ridge. Both rise to depths of less than 100 m at their southeastern ends where they are separated from the continental shelf off Cape Reinga by a 250 m deep saddle. Both plunge to depths of 1,000 m at their northwestern ends.

Position : 34°10'S, 172°05'E

Named after Cape Maria van Diemen near Cape Reinga.

Summerhayes, 1969c
van der Linden, 1968 (Three Kings, Ch)

Marion Seamount
A large, elongate seamount with a minimum depth of 700 m, abuts the western flank of Central Ridge in the South Fiji Basin.

Position : 28°00'S, 175°00'E

Davey, 1982

Mason Canyon*
Incised into the outer continental shelf and upper continental slope about 30 km west of Stewart Island. Extends from a depth of 150 m to the flank of the Solander Trough at a depth of 900 m.

Position : 46°55'S, 167°21'E

Takes its name from Mason Bay on adjacent Stewart Island.

Cullen, 1964 (Foveaux, Ch)

Matakoa Sea-valley
A broad, sweeping valley reaching a depth of 2,300 m at each of its northern, southern, and eastern extensions, north of East Cape Peninsula.

Position : 37°00'S – 27°20'S, 178°10'E – 178°30'E

Name taken from Matakoa Point on the headland of East Cape Peninsula.

Cullen, 1977 (East Cape, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Matatara Knoll
A knoll cresting at 850 m in the outer Bay of Plenty region.

Position : 37°12'S, 176°58'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Matheson Bank*
A small bank on the Chatham Rise 180 km west of Chatham Island. Rises from a surrounding depth of about 400 m to a summit at 197 m deep.

Position : 43°56'S, 179°15'W

Named after Capt. Ron Matheson and the late Capt. Keith Matheson, masters of the past N.Z. Oceanographic Institute research vessel, MV *Taranui.*

Cullen, 1965
Krause & Cullen, 1970 (Bounty, Ch)

Matheson Canyon*

A meandering trough extending from the foot of the North Chatham Slope, about midway between Chatham Island and North Island, northeastwards to the Hikurangi Trough where it is about 3,000 m deep.

Position: 42°30'S – 41°30'S, 179°40'W – 179°00'E

Krause & Cullen, 1970 (Bounty, Ch)

Maungaiti Knoll

A knoll cresting at 450 m in the outer Bay of Plenty region.

Position : 37°22'S, 177019'E

Taken from the Maori, maunga = mountain, iti = small.

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Mayor Channel

A NE-trending channel northeast of Mayor Island in outer Bay of Plenty. Reaches a depth of 1,200 m at its northern end, and shallows to 950 m at the southern end.

Position : 37°05'S, 176°30'E

Named after nearby Mayor Island.

Wright, 1989 (Bay of Plenty, Ch)

Mayor Knolls

A group of knolls east of Mayor Island in the Bay of Plenty.

Position : 37°18'S – 37°22'S, 176°25'E – 176°32'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Mayor Sea Valleys

Aligned NNE downslope from Mayor Island in the Bay of Plenty area, with depths of from 750 m to 1,250 m.

Position : 37°19'S, 176°37'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

McDougall Trough*

A 5,000–5,500 m deep trough, parallel with, and 25 km to the east of, Macquarie Ridge between Macquarie Island and New Zealand. Bounded to the west by the precipitous flank of the Macquarie Ridge and to the east by the more gentle flank of a 3,400 m deep sill that separates it from the Emerald Basin.

Position : 51°50'S – 53°00'S, 161°40'E, 160°45'E

Named for John C. McDougall, NZOI staff member and a member of the Ross Sea and Balleny Islands Expedition 1965.

Summerhayes, 1967 (Auckland, Ch)

Mercury Knoll

A knoll described as having 300 m of relief and a summit of approximately 940 m. It lies east of the Mercury Islands, northeastern New Zealand.

Position : 36°32'S, 176°31'E

Name derived from the adjacent Mercury Islands which received their name by Capt. Cook when he observed the transit of the planet Mercury in 1769.

Carter, 1976 (Cuvier, Ch)
Wright, 1989 (Cuvier, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Mernoo Bank*

At the western end of the Chatham Rise between 150 km and 200 km east of Banks Peninsula. Generally between 90 m and 140 m deep but with isolated pinnacles shoaling to 50 m deep.

Position : 43°20'S, 175°15'E

Named after S.S. *Mernoo*, the vessel from which the bank was discovered in 1935.

Hefferd, 1949
Krause, 1964 (Bounty, Ch)
Krause & Cullen, 1970 (Bounty Ch)
Herzer, 1977 (Mernoo, Ch)

Mernoo Gap*

A saddle between the continental shelf off Banks Peninsula and the western end of the Chatham Rise. Depth at the centre of the saddle is 580 m.

Position : 43°35'S, 174°20'E

Heath, 1972
Krause & Cullen, 1970 (Bounty, Ch)

Mernoo Saddle

A broad, flat area, east of Banks Peninsula on the outer continental slope with an average depth of 500 m.

Position : 43°47'S, 174°25'E

Herzer, 1977 (Banks, Ch)
Herzer, 1977 (Mernoo, Ch)

Metcalfe Seavalley

On central Chatham Rise trending NE–SW, west of Chatham Island, this features reaches a depth of 430 m.

Position : 43°34'S, 179°08'E

Named for Maureen Metcalfe who was responsible for the early draughting of Chatham Rise bathymetry.

Mitchell & Cullen, 1984 (Ch)

Meyer Slope

A NE–SW trending gentle sloping area ranging in depth from 390 m to 420 m on central Chatham Rise, west of Chatham Islands.

Position : 43°24'S, 179°31'E

Named for Kurt W. Meyer, scientist aboard RV *Sonne* from which this feature was discovered.

Mitchell & Cullen, 1984 (Ch)

Middle Arm Brodie, 1966 (Cook St, Ch)
see **Nicholson Canyon**

Middlesex Bank

On the west of the South Maria Ridge, 40 km northwest of Three Kings Islands. Flat topped at depths ranging from 99 m to 132 m.

Position : 33°57'S, 171°45'E

So named following the nomenclature on the relevant hydrographic chart.

Mitchell & Eade, 1990 (Three Kings, Ch)

Middleton Basin*

Trends N–S and separates the northern part of the Dampier Ridge from the Lord Howe Rise. Bounded to the north by a sill west of Kelso Bank and to the south by the Middleton and Elizabeth Reefs. Axis generally between 2,600 m and 3,600 m deep.

Position : 24°25'S – 29°25'S, 158°45'E – 159°25'E

Named after Middleton Reef.

van der Linden, 1969
van der Linden, 1969 (Norfolk, Ch)

Middleton Reef

A reef about 45 km north of Elizabeth Reef and north of Lord Howe Island in the Tasman Sea. It rises from 3,000 m to 250 m.

Position : 29°28'S, 159°04'E

van der Linden, 1969 (Norfolk, Ch)
Monahan *et al.*, 1982 (Ch)
Kroenke *et al.*, 1983 (Ch)

Milford Canyon*

A tributary of the Haast Canyon cut into the continental shelf and slope off Milford Sound. Its head is 7 km west of the entrance to Milford Sound and is about 80 m deep. Descends to join the Haast Canyon at a depth of 3,800 m.

Position : 44°35'S, 167°40'E

Named after the area on the adjacent land.

Brodie, 1964a

Minerva Abyssal Plain

This feature occupies about half of the area of the South Fiji Basin. It abuts against the Lau Ridge in the east and extends west to the Three Kings Rise–Norfolk Ridge, reaching a depth of 4,000 m in the southeast, and 4,800 m in the west.

Position : 24°00'S – 27°00'S, 175°00'E – 179°00'E

Named after the most southern reef on the Lau Ridge.

Packham & Terrill, 1975
Terrill & Packham, 1974 (Ch)

Mitchell Seavalley

This NE–SW trending valley area is as deep as 425 m on the southeastern section of central Chatham Rise, west of Chatham Islands.

Position : 43°37'S – 43°40'S, 179°35'E – 179°28'E

Named for John S. Mitchell, NZOI staff member on cruise which discovered this feature.

Mitchell & Cullen, 1984 (Ch)

Mobil Seamount
A conical seamount rising 1,000 m from the seafloor on the Hikurangi fore-arc.

Position : 41°07'S, 179°47'W

Discovered in 1972 on a survey carried out by Mobil Oil Company.

Baldwin & Lewis, 1991 (Cook, Ch)

Moeraki Canyon (east coast, South Island)
Incised into the upper continental shelf, northeast of the Otago Peninsula. Extends from a depth of 250 m to about 1,000 m.

Position : 45°30'S, 171°21'E.

Named after the area on land famous for its boulders.

Carter & Carter, 1981 (Oamaru, Ch)

Moeraki Canyon (west coast, South Island)
Trends NE–SW and cuts into the continental shelf off Westland. The most northern of a series of canyons in this area. Has a depth of 1,000 m furtherest from the continental shelf.

Position : 43°35'S, 169°00'E

Named after the Lake Moeraki and river on the nearby land.

Carter, 1981 (Jackson, Ch)

Mokohinau Canyon
A N-E trending canyon-like feature, with an upper slope depth of 1,250 m in the northern Bay of Plenty area.

Position : 35°45'S, 176°15'E

Named after the nearby group of islands.

Wright, 1989 (Cuvier, Ch)

Mokohinau Knoll
A knoll of 600 m relief in the northern Bay of Plenty area.

Position : 35°40'S, 176°17'E

Carter, 1976 (Cuvier, Ch)

Mokohinau Sea Valley*

Carter, 1976 (Cuvier, Ch)
see **Mokohinau Canyon**

Molyneux Canyon
Cuts into the outer continental shelf and continental slope between 30 km and 130 km off the Clutha River, Otago. Descends to join the South (Bounty) Channel at a depth of about 1,500 m.

Position : 46°31'S, 170°20'E

Named after Port Molyneux at the entrance to the Clutha River.

Carter & Carter, 1986
Carter, 1986 (Otago, Ch)
Hughes, 1987 (Nuggets, Ch)

Molyneux Channel
Trends W–E, SSE of Molyneux Canyon further offshore from the continental shelf. Has a floor depth of 1,100 m.

Position : 46°51'S, 170°40'E

Carter, 1986 (Otago, Ch)

Molyneux Sea Valley

Brodie, 1970 (Otago, Ch)
see **Molyneux Canyon**

Monowai Seamount
An active submarine volcano on the Tonga-Kermadec Ridge. The volcanic cone rises from depths of 1,000–1,500 m to about 120 m; at the 1,000 m depth contour it is elongated NNW–SSE with length 11 km and width 8 km, and with the steepest flank on the southeast side having a slope of 20°.

Position : 25°53'S, 177°11'W

Named after HMNZS *Monowai*. Has also been informally called "Orion Seamount".

Davey, 1980

Monowai Sea Valley
A valley on the seafloor at the northeast edge of

the Tasman Basin and southwest edge of Lord Howe Rise. Depth recorded as 2,750 m.

Position : 36°50'S, 163°30'E

Eade & van der Linden, 1977 (Bellona, Ch)

Monowai Spur
A rise on the seafloor adjacent to, and south of, the Monowai Sea Valley, reaching a depth of 2,500 m.

Position : 37°10'S, 162°40'E

Eade & van der Linden, 1977 (Bellona, Ch)

Motiti Scarp
A downslope break towards the shelf edge at the foot of the Tauranga Sea Valley in the Bay of Plenty area.

Position : 37°33'S, 176°42'E

Named after the adjacent island.

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Motuhora Scarp
A break in the shelf edge off Whakatane, in the Bay of Plenty.

Position : 37°48'S, 177°05'E

Takes it name from the Maori name for Whale Island, i.e., Motuhora .

Lewis & Pantin, 1984
Wright, 1990
Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Motukura Bank*
Pantin, 1963
Pantin, 1963 (Turnagain, Ch)
see **Motukura Ridge**

Motukura Ridge
Trends NE–SW on the upper continental slope 35 km ofshore of southern Hawkes Bay Land District. Rises to a minimum recorded depth of 324 m. Separated from the continental shelf by the 500 m deep Motukura Trough.

Position : 40°02'S, 177°22'E

Motukura is the Maori name for Bare Island which lies off the adjacent coast.

Lewis, 1976 (Turnagain, Ch)
Baldwin & Lewis, 1990 (Cook, Ch)

Motukura Depression•
Pantin, 1963
Pantin, 1963 (Turnagain, Ch)
see **Motukura Trough**

Motukura Trough
Trends NE–SW on the upper continental slope 25 km off southern Hawkes Bay Land District. Separates the continental shelf and the Motukura Ridge. Axis ranges in depth from about 480 m at its northeastern end to 560 m at its southwestern end.

Position : 40°00'S, 177°13'E

Lewis, 1976 (Turnagain, Ch)

Munro Bank
A small bank rising to 40 m depth between Great Island and South West Islands of the Three Kings Group off northern New Zealand.

Position : 34°10'S, 172°06'E

Named for Cdr Ian Munro, RNZN, who surveyed this area.

Eade, 1988 (Three Kings Shelf, Ch)

Murimotu Canyons*
Summerhayes, 1969c
see **Murimotu Seavalleys**

Murimotu Seavalleys
Two narrow valleys on the northeast facing continental slope between Cape Reinga and the Three Kings Islands, centred about 40 km north of Cape Reinga and 25 km northeast of Three Kings Islands. Most of the valleys start in the saddle between the continental shelf off Cape Reinga and the Maria Ridge.

Position : 34°02'S, 172°55'E

Named after Murimotu Island, a small island off North Cape.

Mitchell & Eade, 1990 (North Cape, Ch)
Mitchell & Eade, 1990 (Three Kings, Ch)

Narrows Basin*

An enclosed basin in the northwest part of Cook Strait. Reaches a maximum depth of 390 m and enclosed by a 260 m deep sill at its southeastern end. Has an isolated high, Fisherman's Rock, at its northern end.

Position : 40°10'S, 174°32'E

So named because of its position in the narrowest part of Cook Strait.

Brodie, 1966 (Cook Strait, Ch)
Lewis & Mitchell, 1980 (Cook Strait, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Needle Knoll

One of a group of knolls at the northern end of the Alderman Trough in the outer Bay of Plenty region. A nicely rounded, small knoll rising from depths of 2,050 m to crest at about 1,700 m.

Position : 36°20'S, 176°55'E

Takes its name from Needles Point immediately north of Great Barrier Island.

Wright, 1989 (Cuvier, Ch)

New Caledonia Basin*

A broad, 2,500 km long depression separating the Lord Howe Rise to the west and the Norfolk Ridge and New Caledonia to the east. It can be divided into three segments; a southern segment that is NW trending for 1,000 km from the foot of the continental slope west of North Island, a central segment that trends northwards for 1,000 km to near Noumea, and a northern NW-trending segment about 500 km in length. The depth of the axis increases from 1,500 m deep near New Zealand to 3,000–4,000 m deep in the central segment, and 3,500–4,000 m in the northern segment.

Position : 29°00'S – 37°00'S, 162°40'E – 170°00'E

Named after New Caledonia which is at its northern end.

Wiseman & Ovey, 1954
Pantin & Brodie, 1960 (North is, Ch)
van der Linden, 1969 (Norfolk, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

New Caledonia Trough*

A name formerly used either as a synonym of New Caledonia Basin (Marshall, 1910) or for only the northern segment of the New Caledonia Basin (van der Linden, 1966).

Marshall, 1910
van der Linden, 1966
Baldwin & Lewis, 1991 (Cook, Ch)

New Zealand Plateau*

Those generally flat areas around New Zealand that are elevated above the abyssal ocean floor. In general, limited by the 2,000 m isobath that surrounds New Zealand and underlain by crust of continental or sub-continental thickness. Includes the Campbell Plateau, the Chatham Rise, and the Lord Howe Rise.

Marshall, 1910
Brodie, 1964a

Ngatoro Basin*

A small, deep depression trending NE–SW at the foot of the continental slope off the Bay of Plenty. extends from 60 km to 150 km northeast of Mayor Island. Floor at a depth of between 3,200 m and 3,300 m.

Position : 36°30'S, 177°15'E

Its name in Maori means "resound".

van der Linden, 1968 (Cook, Ch)
Carter, 1976 (Cuvier, Ch)
Wright 1989 (Cuvier, Ch)
Wright, 1990 (Havre Trough, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Ngatoro Canyon

At the southwestern end of the Ngatoro Basin, northwest of Tauranga Trough. Reaches depths of about 1,950 m.

Position : 36°50'S, 176°50'E

Wright, 1989 (Cuvier)

Ngatoro Ridge

A ridge with three main crests — Waioeka, Waitotahi, and Nukuhou Knolls, aligned NE–SW between the Tauranga Trough to the northwest and White Island Trough to the southeast.

Position : 37°00'S – 37°15'S, 177°15'E – 177°20'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)

Wright, 1989 (Bay of Plenty, Ch)
Wright, 1990 (Havre Trough, Ch)

Nicholson Bank

In Cook Strait about 17 km southwest of Turakirae Head, between Nicholson Canyon and South Arm of the Cook Strait Canyon. Rises from the 400 m deep arms of the canyon to a minimum recorded depth of 125 m.

Position : 41°30'S, 174°45'E

Previously named Centre Bank.

So called now after old name for Wellington's port (Port Nicholson).

Mitchell & Lewis, 1980 (Cook Strait, Ch)
Mitchell, 1988 (Palliser, Ch)
Mitchell, 1988 (Campbell, Ch)

Nicholson Canyon

A minor branch of Cook Strait Canyon trending NW–SE between the continental shelf off Wellington and Nicholson Bank. Axis ranges from 200 m to 600 m deep.

Position : 41°28'S, 174°48'E

Previously named Middle Arm.

Mitchell & Lewis, 1980 (Cook Strait, Ch)
Mitchell, 1988 (Palliser, Ch)
Mitchell, 1988 (Campbell, Ch)

Norfolk Basin*

A 3,500–4,300 m deep depression centred about midway between North Cape and Norfolk Island. Bounded by the Three Kings Rise to the east, the Reinga Ridge to the south, the Norfolk Ridge to the west and a 1,500–2,500 m sill to the north.

Position : 31°20'S, 169°10'E

Named after Norfolk Island.

Fleming, 1951
Lawrence, 1957 (Ch)
van der Linden, 1968 (Three Kings, Ch)

Norfolk Ridge*

Extends from New Caledonia southwards through Norfolk Island to Wanganella Bank. Continues southeastwards from Wanganella Bank as a series of parallel ridges to the foot of the continental slope west of Northland. Total length about 1,500 km. Crest generally between 200 m and 1,600 m deep, flat-topped at many places.

Position : 27°00'S, 167°30'E

Marshall, 1910
Fairbridge & van der Linden, 1966
van der Linden, 1968 (Lord Howe, Ch)
van der Linden, 1968 (Three Kings, Ch)
van der Linden, 1969 (Norfolk, Ch)
Eade, 1972 (Wanganella Bank,Ch)

Norfolk Trough

Named in IHO/IOC (1988).Position : 35°50'S, 168°00'E

IHO/IOC Chart 40–600

Norrie Seamount*

On the western slope of the West Norfolk Ridge. Shoals to aobut 700 m from a surrounding depth of about 1,600 m.

Position : 32°20'S, 166°16'E

Named after Capt. H.F. Norrie of the TSMV *Wanganella* from 1955 to 1956.

van der Linden, 1967
van der Linden, 1968 (Lord Howe, Ch)

Norris Hole

This named area descends to a depth of 425 m from surroundings of depths of 400 m, on central Chatham Rise, west of Chatham Islands.

Position : 43°29'S, 179°32'E

Named for Robert M. Norris, a visiting scientist at NZOI, from University of California, Santa Barbara, who first recognised and described the area.

Mitchell & Cullen, 1984 (Ch)

North Ahipara Bank

A small bank with two crests reaching 50 m, on the continental shelf offshore fom northeast New Zealand.

Position : 35°03'S, 172°53'E

Named after the settlement on the adjacent land.

Irwin & Eade, 1984 (Hokianga, Ch)

North Bounty Channel*

At the western end of the Bounty Trough; the northernmost of the three western tributaries of the Bounty Channel. Formed from the union of several canyons that incise the continental shelf and steep upper continental slope betwen 20 km and 100 km northeast of the Otago Peninsula.

Position : 45°40'S, 172°25'E

Brodie, 1970 (Otago, Ch)
Krause & Cullen, 1970 (Bounty, Ch)
Carter & Carter, 1981 (Oamaru, Ch)

North Bounty Slope*

The steep slope between the Bounty Platform and the Bounty Trough.

Position : 47°00'S, 179°00'E

Cullen, 1969 (Bounty Is, Ch)

North Cape Canyon*

Cuts the continental shelf and upper continental slope east of North Cape. Extends from about 2 km to about 20 km offshore and from a depth of 40 m to a depth of about 1,000 m.

Position : 34°22'S, 173°10'E

Takes its name from the nearby mainland.

Summerhayes, 1969c

North Chatham Slope*

The steep northern slope of the Chatham Rise. Extends from a depth of about 500 m to a depth of about 2,500 m. Forms the southern boundary of the Hikurangi Trough. Trends E–W for 1,000 km.

Position : 42°45'S, 174°15'E

Krause, 1966
Krause & Cullen, 1970 (Bounty, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

North Chatham Terrace

The triangular area of ocean floor between North Island and the Chatham Rise. The area is predominantly 3,000 m deep and has a scarp on its northeastern side.

Position : 42°45'S, 175–180°E

Baldwin & Lewis, 1991 (Cook, Ch)

Northern Viti Canyon*

On the upper continental slope 100 km WNW of Cape Egmont. Extends from a depth of 200 m to 1,000 m.

Position : 39°00'S, 172°30'E

van der Linden, 1966 (Egmont, Ch)

Northland Plateau

A NW–SE trending feature from 1,500 m deep. Adjoins at right angles, the southern end of Three Kings Ridge and generally follows the alignment of North Island, New Zealand.

Position : 34°00'S – 35°00'S, 173°00'E – 177°00'E

Kroenke *et al.*, 1983 (Ch)

North Madden Bank*

Trends NNE–SSW on the upper continental slope 35 km offshore from southern Hawkes Bay Land District. Separated from the South Madden Bank by the 1,500 m deep Madden Canyon and from the continental slope by a 600 m deep saddle. Shoals to a minimum recorded depth of 180 m.

Position : 40°21'S, 177°12'E

Pantin, 1963
Pantin, 1963 (Turnagain, Ch)
Lewis, 1976 (Turnagain, Ch)

North Maria Ridge

This ridge is one of the northern components of the Maria Ridge. It trends northwest offshore from northern New Zealand on the continental shelf.

Position : 33°48'S, 172°08'E

van der Linden, 1968 (Three Kings, Ch)
Mitchell & Eade, 1990 (Three Kings, Ch)

North Ngatoro High

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
see **Waioeka Knoll**

North Norfolk Basin

This circular feature is the upper portion of the Norfolk Basin and is separated from the South Norfolk Basin by a ridge on which is Norfolk Island. To the west is the N-S aligned Norfolk Ridge. Has a depth of at least 4,000 m.

Position : 27°00'S, 168°00'E

Kroenke *et al.*, 1983 (Ch)

North Paritu Ridge
This ridge has a NE–SW alignment and rises to 840 m from 1,500 m, east of the Paritu Trough.

Position : 38°56'S, 178°42'E

Named after Paritu Rock which lies just off the adjacent land.

Arron & Lewis 1991 (Mahia, Ch)

North Ritchie Trough
This N–S trending trough has a wide floor and is 1,000–1,500 m deep to the south, meeting up with the Poverty Sea Valleys to the north.

Position : 39°25'S, 178°23'E

Takes its name from Ritchie Banks which lie to the south.

Arron & Lewis, 1991 (Mahia, Ch)

North Tasman Seamount 1* Standard, 1961
see **Queensland Guyot**

North Tasman Seamount 2* Standard, 1961
see **Brittania Guyots**

North Tasman Seamount 3* Standard, 1961
see **Brittania Guyots**

North Tasman Seamount 4*
On the western flank of the Lord Howe Rise. Rises to a minimum recorded depth of 1,062 m from a surrounding depth of about 2,800 m.

Position : 28°28'S, 158°22'E

Standard, 1961

North Tasman Seamount 5*
van der Linden, 1969 (Norfolk, Ch)
see **Gifford Guyot**

North Tasman Seamount 6*
Near the crest of the Lord Howe Rise, 1,620 m high. Rises to a minimum recorded depth of 24 m.

Position : 27°10'S, 161°50'E

Standard, 1961

North Tasman Seamount 7*
In the Lord Howe Basin 90 km southwest of Lord Howe Island. Shoals from the 4,000 m deep basin to a minimum recorded depth of 2,578 m.

Position : 32°06'S, 158°25'E

Standard, 1961
van der Linden, 1968 (Lord Howe, Ch)

North West Trough* Brodie, 1966 (Patea, Ch)
see **D'Urville Seavalley**

Nukuhou Knoll
At the southern end and on the southeastern side of the Ngatoro Ridge, this knoll crests at 700 m.

Position : 37°13'S, 177°15'E

Name taken from the river and settlement on the adjacent land.

Wright, 1989 (Bay of Plenty, Ch)

Oariki Seavalley
A N–S aligned valley close to the contonental shelf edge, to the east and at the southernmost end of, the White Island Trough, Its bottom depth is about 1550 m and rises to about 400 m.

Position : 37°33'S, 177°22'S

Wright, 1989 (Bay of Plenty, Ch)

Ohena Knoll
One of a group of knolls at the northern end of the Alderman Trough in the outer Bay of Plenty region, rising from a depth of 1,650 m to crest at 800 m.

Position : 36°26'S, 176°57'E

Named after the island off the northern head at the entrance to Mercury Bay, and south of the Mercury Islands group.

Wright, 1989 (Cuvier)
Baldwin & Lewis, 1991 (Cook, Ch)

Okains Canyon
Incised into the continental slope, east of Pega-

sus Bay, northern Canterbury. Has depths from 200 m to about 800 m.

Position : 43°22'S, 173°57'E

Takes its name from the bay on Banks Peninsula.

Herzer & Carter, 1983 (Pegasus, Ch)

Omakere Depression*

On the lower continental slope, 90 km off southern Hawkes Bay Land District. Floor at a depth of 2,200 m.

Position : 40°20'S, 177°55'E

Named after a area on the adjacent land.

Pantin, 1963
Pantin, 1963 (Turnagain, Ch)

Omakere High* Pantin, 1963
Pantin, 1963 (Turnagain, Ch)
see Omakere Ridge

Omakere Ridge

Trends NE–SW on the middle part of the continental slope, 70 km off Cape Kidnappers, southern Hawkes Bay Land District. Rises to a summit of 1,750 m high.

Position : 40°02'S, 177°51'E

Lewis, 1976 (Turnagain, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Opauawe Bank

On the middle part of the continental slope 18 km southeast of Cape Palliser. Summit at a depth of about 900 m. Separated from the upper continental slope by a saddle that is only slightly deeper.

Position : 41°44'S, 175°26'E

Name taken from the river on adjacent mainland.

Mitchell, 1988 (Campbell, Ch)
Mitchell, 1988 (Palliser, Ch)

Opauawe Canyon*

Incised into the continental slope between 5 km and 25 km SSE of Cape Palliser. Extends from a depth of about 80 m, southwards to the flank of the Hikurangi Trough at a depth of 2,000 m.

Position : 41°45'S, 175°23'E

Pantin, 1963 (Palliser, Ch)
Mitchell, 1988 (Campbell, Ch)

Opouawe High* Pantin, 1963
Pantin, 1963 (Palliser, Ch)
see **Opouawe Bank**

Oreti Bank*

In the middle of Foveaux Strait. Rises from 30 m deep to 13 m deep.

Position : 46°32'S, 168°05'E

Takes its name from the Oreti River in Southland.

Cullen, 1966
Cullen, 1964 (Foveaux, Ch)

Otara Knoll

Situated at the northeastern end of the Ngatoro Ridge where it has a crest top of 1,150 m rising from as deep as 1,900 m.

Position : 36°57'S, 177°21'E

Named after the Otara River which flows in a northwesterly direction from the outer western slopes of the Raukumara Ranges to Opotiki Harbour.

Wright, 1989 (Bay of Plenty, Ch)

Ozbourn Seamount*

On the eastern flank of the Tonga–Kermadec Trench adjacent to the sill that separates the Tonga Trench from the Kermadec Trench. Rises from depths greater than 5,000 m to depths of less than 2,000 m.

Position : 25°50'S, 174°50'W

Origin of name unknown.

Menard *et al.*, 1968 (Ch)

Pahaua Canyon*

Incised into the outer continental shelf and continental slope, from 4 km to 40 km off the Wairarapa coast. Extends from a depth of 50 m to a depth of 2,500 m on the flank of the Hikurangi Trough. Slightly expanded at its upper end.

Position : 41°35'S, 175°45'E

Named after the river on the nearby coast.

Pantin, 1963
Pantin, 1963 (Palliser, Ch)
Mitchell, 1988 (Palliser, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Palliser Arm*
Pantin, 1963
Pantin, 1963 (Palliser, Ch)
see **Palliser Canyon**

Palliser Canyon
A branch of the Cook Strait Canyon incised into the continental slope from 10 km to 25 km southwest of Cape Palliser. Recognised from a depth of 500 m to the point where it joins the main Cook Strait Canyon at a depth of 1,700 m.

Position : 41°44'S, 175°05'E

Named derived from nearby Cape Palliser.

Mitchell, 1988 (Campbell, Ch)
Mitchell, 1988 (Palliser, Ch)

Pandora Bank*
On the inner continental shelf 10 km southwest of Cape Maria van Diemen. Rises from about 40 m deep to less than 10 m deep — depth and positions of shoals liable to change.

Position : 34°35'S, 172°35'E

Named after the surveying vessel HMS *Pandora* which surveyed it in 1853.

Not to be confused with Pandora Bank at 12°30'S, 172°10'E.

Summerhayes, 1969c
Mitchell & Eade, 1990 (Three Kings, Ch)

Pantin Bank
Lies east of North Ritchie Trough and forms the northern end of Ritchie Ridge. Rises from 1,300 m in the west to a minimum recorded depth of 840 m.

Position : 39°21S, 178°21'E

Given this name for Henry M. Pantin, NZOI staff member 1955–1967.

Arron & Lewis, 1991 (Mahia, Ch)

Paoanui Depression*
Pantin, 1963
Pantin, 1963 (Turnagain, Ch)
see **Paoanui Trough**

Paoanui High*
Pantin, 1963
Pantin, 1963 (Turnagain, Ch)
see **Paoanui Ridge**

Paoanui Ridge
A NE–SW trending ridge on the lower continental slope 80 km off southern Hawkes Bay Land District. Crest lies at a depth of between 1,500 m and 1,600 m which is about 500 m above the more shallow areas on either side.

Position : 40°15'S, 177°48'E

Name derived from Paoanui Point on the adjacent land.

Lewis, 1976 (Turnagain, Ch)
Baldwin & Lewis, 1991 (Cook Ch)

Paoanui Trough
A NE–SW trending trough on the middle continental slope 70 km off southern Hawkes Bay Land District. Floor generally between 1,800 and 2,000 m deep but reaching a maximum depth of 2,080 m.

Position : 40°12'S, 177°45'E

Lewis, 1976 (Turnagain, Ch)

Papamoa Knoll
A small knoll in the outer Bay of Plenty region rising from a depth of 1,100 m to crest at 900 m.

Position : 37°06'S, 176°49'E

Name derived from the settlement on adjacent land.

Wright, 1989 (Bay of Plenty, Ch)

Papanui Canyon*
Incised into the outer continental shelf and upper continental slope between 20 km and 40 km off the Otago Peninsula. Extends from a depth of 130 m to a depth of about 1,000 m. One of the tributaries of the Bounty Channel.

Position : 45°52'S, 177°05'E

Named after Papanui Inlet on the Otago Peninsula.

Brodie, 1970 (Otago, Ch)
Carter, 1986 (Otago, Ch)

Paparoa Canyon

Trends W–E at right angles to the continental shelf, off Westland. Floor of the canyon as deep as 1,200 m rising to 950 m at its eastern end.

Position : 42°22'S, 169°53'E

Given the name after the nearby range of mountains on mainland.

Norris, 1979 (Foulwind, Ch)

Parengarenga Canyons*

Two canyons on the upper continental slope about 30 km southest of North Cape. Extends from a depth of 130 m to about 1,000 m deep.

Position : 34°24'S, 173°17'E

Named after the harbour on the adjacent coast.

Summerhayes, 1969c
Mitchell & Eade, 1990 (North Cape, Ch)

Paritu Depression* Pantin, 1963
Pantin, 1963 (Mahia, Ch)

see **Paritu Trough**

Paritu Trough

Trends NE–SW on the middle part of the continental slope about 60 km off Gisborne. Separates the North and South Paritu Ridges. Floor at a depth of about 1,500 m.

Position : 39°00'S, 178°37'E

Named after Paritu Rock which lies just off the adjacent land.

Arron & Lewis, 1991 (Mahia, Ch)

Pasho Seavalley

This small N–S trending valley-like area has a bottom depth of 430 m with areas either side at depths of 400 m. It is on the central Chatham Rise, west of Chatham Islands.

Position : 43°25'S, 179°36'E

Given this name for Dr David W. Pasho who studied the phosphorites from Chatham Rise.

Mitchell & Cullen, 1984 (Ch)

Patea Banks

A group of very shallow banks, to 25 m, offshore in the South Taranaki Bight.

Position : 39°47'S, 174°22'E

Takes its name from the township on nearby land.

Brodie, 1969 (Patea, Ch)

Paturau Bank

An area of irregular topography on the inner continental shelf off northwest Nelson, between 10 km and 15 km from shore. Rises from 80 m to 40 m depth.

Position : 40°36'S, 172°18'S.

Named after the river on the adjacent mainland.

Mitchell, 1986 (Tasman, Ch)

Paturau Shoal

An area of irregular topography between the shore and Puturau Bank.

Position : 40°38'S, 172°25'E.

Mitchell, 1986 (Tasman, Ch)

Pegasus Canyon*

A major canyon incised into the outer continental shelf and upper continental slope off northern Canterbury. Extends from 40 km northeast of Banks Peninsula, northeastward to the southern end of the Hikurangi Trough. Almost parallel with the northern Canterbury coast and about 50 km offshore. Axis extends from a depth of 200 m to a depth of 2,000 m.

Position : 43°33'S – 42°42'S, 173°25'E – 174°02'E

Takes its name from Pegasus Bay which is at the head of the canyon.

Krause, 1966
Cullen & Brodie, 1966 (Pegasus, Ch)
Krause, & Cullen, 1970 (Bounty, Ch)
Herzer & Carter, 1983 (Pegasus, Ch)

Penguin Seamount*

In the Lord Howe Basin about 70 km northeast of Lord Howe Island. Rises from the 4,000 m deep basin floor to a summit about 1,800 m deep.

Position : 31°05'S, 158°30'E

Named after HMS *Penguin* from which soundings were obtained c. 1900.

van der linden, 1970

Phillip Sea Valley*

A NE–SW trending depression on the southwestern flank of the South Fiji Basin. Axis generally between 3,000 m and 4,000 m deep. Lies between Kingston Basin to the west and the northern part of the Three Kings Rise to the southeast.

Position : 29°00'S, 171°00'E

Named after Phillip Island near Norfolk Island.

van der Linden, 1967

Phillip Trough

Possibly the same feature as Phillip Sea Valley.

Position : 28°30'S, 173°00'E

Terrill & Packham, 1974 (Ch)

Pickersgill Seamount*

In the Tasman Basin 400 km southwest of Fiordland. Rises from the 4,600 m deep abyssal floor to a summit at a depth of 3,400 m. Trends NE–SW and is about 100 km long by 25 km wide at its base.

Position : 46°45'S, 161°40'E

Named for Lt. Richard Pickersgill of HMS *Resolution*, 1771–1776.

van der Linden & Hayes, 1972 (Resolution, Ch)

Porangahau Depression*

Lewis & Gibb, 1970 (Turnagain, Ch)

see **Porangahau Terrace**

Porangahau High*

Pantin, 1963

Pantin, 1963 (Turnagain, Ch)

see **Porangahau Ridge**

Porangahau Ridge

A NE–SW trending ridge on the lower continental slope, 80 km off southern Hawkes Bay Land District. Rises about 200 m above a depression to landward to a minimum depth of 1,582 m.

Position : 40°32'S, 177°39'E

Given the name after a river and settlement on the adjacent land.

Lewis, 1976 (Turnagain, Ch)

Baldwin & Lewis, 1991 (Cook, Ch)

Porangahau Terrace

A flat-floored area on the lower continental slope, at the lower end of the Madden Canyon, 70 km off southern Hawkes Bay Land District . Floor at a depth of about 2,000 m.

Position : 40°52'S, 177°17'E

Lewis, 1976 (Turnagain, Ch)

Poverty Canyons*

A group of five canyons incised into the outer continental shelf and upper continental slope about 20 km off southern Gisborne Land District. Extends from depths of 80–200 m to 1,100 – 1,300 m.

Position : 39°00'S, 178°15'E

Takes its name from nearby Poverty Bay.

Pantin, 1963

Pantin, 1963 (Mahia, Ch)

Poverty Sea-valleys*

Two steep-sided, W–E trending valleys incised into the lower continental slope about 50 km off southern Gisborne Land District. Extend from the ParituTrough at a depth of 1,500 m to the southern end of the Kermadec Trench at a depth of about 3,300 m.

Position : 39°13'S, 178°32'E

Pantin, 1963

Pantin, 1963 (Mahia, Ch)

van der Linden, 1968 (Cook, Ch)

Baldwin & Lewis, 1991 (Cook, Ch)

Arron & Lewis, 1991 (Mahia, Ch)

Pukaki Bank*

On the northern edge of the Campbell Plateau. Rises gently from the surrounding 400–600 m deep plateau to a flat top about 30 km in diameter, at a depth of 130–140 m. Numerous steep-sided pinnacles rise from this flat top to a minimum recorded depth of 60 m.

Position : 49°15'S, 171°45'E

Named after HMNZS *Pukaki* which surveyed the bank in 1950.

Brodie, 1964a

Summerhayes, 1967 (Campbell, Ch)

Pukaki Canyon*

Trends generally northwards from the Mernoo

Gap off Banks Peninsula towards the southern end of the Hikurangi Trough. Extends from a depth of 130 m, at a point where it joins the Pegasus Canyon.

Position : 43°38'S – 42°58'S, 173°56'E – 173°59'E

Named after Pukaki Bank.

Cullen & Brodie, 1966 (Pegasus, Ch)
Carter & Herzer, 1983 (Pegasus, Ch)

Pukaki Channel*

Incised into the northern margin of the Campbell Plateau. Its head is at the eastern end of the Pukaki Rise and western end of the Pukaki Saddle and at a depth of about 1,200 m. It extends northeastwards to the Bounty Channel at a depth of 3,000 m.

Position : 48°20'S – 46°40'S, 175°35'E – 176°40'E

Krause & Cullen, 1970 (Bounty, Ch)

Pukaki Gap* Krause, 1964 (Bounty, Ch)
see **Mernoo Gap**

Pukaki Rise*

A slightly elevated region along the northern edge of the Campbell Plateau, the Pukaki Bank at its eastern end being its shoalest part. Crest generally about 450 m deep.

Position : 49°30'S, 171°40'E

Summerhayes, 1969a
Summerhayes, 1967 (Campbell, Ch)

Pukaki Saddle*

On the northeastern part of the Campbell Plateau between the Bounty Platform and Pukaki Rise. Centre of saddle at a depth of 1,370 m separating the 100–200 m deep platform.

Position : 48°30'S, 176°30'E

Summerhayes, 1969a
Summerhayes, 1967 (Campbell, Ch)

Pukeroro Depression* Pantin, 1963
Pantin, 1963 (Palliser, Ch)
see **Pukeroro Trough**

Pukeroro High* Pantin, 1963
Pantin, 1963 (Palliser, Ch)
see **Pukeroro Ridge**

Pukeroro Ridge

Trends NE–SW on the lower continental slope off the Wairarapa coast. Crest at depths ranging from about 1,400 m to about 1,800 m. Rising from 200 m to 400 m above the Pukeroro Trough to landward.

Position : 41°30'S, 176°34'E

Takes its name from a peak in the Aorangi Ranges on the adjacent land.

Mitchell, 1988 (Palliser, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Pukeroro Trough

Trends NE–SW on the lower continental slope 50 km off the Wairarapa coast. Floor at a depth of 1,900 m.

Position : 41°28'S, 176°30'E

Mitchell, 1988 (Palliser, Ch)

Purerua Seamount

A broad, flat-topped, NE-trending seamount, which crests at about 1,400 m, NNE of northern New Zealand

Position : 33°53'S, 174°33'E

Name derived from the locality in the Bay of Islands County on adjacent mainland.

Mitchell & Eade, 1990 (North Cape, Ch)

Puysegur Bank*

A ridge extending southwards from the edge of the continental shelf off Puysegur Point, in the southwestern corner of South Island. Crest of ridge less than 180 m deep, the mimimum recorded depth being 64 m. Lies at the northern limit of the Macquarie Ridge.

Position : 46°30'S, 166°00'E

Namd after the nearby Point on the mainland.

Brodie, 1964a
van der Linden & Hayes, 1972 (Resolution, Ch)

Puysegur Rise

This flat-topped submarine bank trends NNE–SSW, southwest off Fiordland. It rises from a depth of about 1,000 m to about 500 m.

Position : 46°15'S, 166°00'E

Norris & Carter, 1980

Puysegur Trench*

Trends NNE–SSW on the western side of the Macquarie Ridge near its northern end. Axis about 6,000 m deep, 1,500–2,000 m deeper than the Tasman Basin to the west.

Position : 48°00'S, 164°40'E

Lawrence, 1967 (Ch)
Summerhayes, 1967 (Auckland, Ch)
van der Linden, 1972 (Resolution, Ch)

Queensland Guyot*

In the Tasman Basin about 190 km east of Brisbane. Rises from a depth of about 4,600 m to a minimum recorded depth of 384 m.

Position : 27°30'S, 155°06'E

Named after the adjacent state of Australia.

Conolly, 1969
Menard *et al.*, 1968 (Ch)

Rakaia Seavalley

Due south of Banks Peninsula, on the continental slope in depths from 500 m to 1,100 m.

Position : 44°40'S, 173°00'E

Named after the area on the mainland.

Herzer, 1980 (Ellesmere, Ch)

Rakiura Gap*

A NW–SE trending submarine valley at the eastern end of Foveaux Strait between Ruapuke Island and Stewart Island. Axis ranges in depth from 35 m to 45 m.

Position : 46°50'S, 168°18'E

Rakiura is the Maori name for Foveaux Strait.

Cullen, 1966
Cullen, 1964 (Foveaux, Ch)

Rakitu Canyon

This ESE-trending canyon leads to the Colville Ridge. It is approximately 18 km long and has a maximum recorded depth of over 1,600 m.

Position : 35°55'S, 176°30'E

Named after nearby Rakitu Island. Rakitu is Maori for Arid Island, so named by Capt. Cook on his impression of the soil.

Carter, 1976 (Cuvier, Ch)
Wright, 1989 (Cuvier, Ch)

Ranfurly Bank*

On the outer continental shelf 17 km ENE of East Cape. Rises from depths of about 130 m to a minimum recorded depth of 25 m.

Position : 37°35'S, 178°53'E

Named after Lord Ranfurly, Governor-General of New Zealand from 1897 to 1904.

British Admiralty, 1905 (Ch)
Cullen, 1977 (East Cape, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Ranfurly Saddle

On the inner continental shelf, east of East Cape, this saddle, trending in a northeasterly direction, connects with the Ranfurly Bank. Maximum depth is 150 m.

Position : 37°40'S, 178°45'E

Cullen, 1977 (East Cape, Ch)

Rangatira Knoll

This oval-shaped knoll in the outer Bay of Plenty region has a crest at about 150 m.

Position : 37°15'S, 176°51'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch
Wright, 1989 (Bay of Plenty, Ch))

Rangiauria Rise*

Small ridge extending southward from the southern slope of the Chatham Rise from 100 km to 200 km SSE of Chatham Island. Crest between 3,400 m and 3,800 m deep.

Position : 45°20'S, 176°30'W

Rangiauria is the Maori name for Pitt Island which lies to the south of Chatham Island.

Cullen, 1969 (Chatham, Ch)

Raoul Trough

A NNE-trending trough between the Kermadec

Ridge on the east and the southern end of the Lau Ridge.

Position : 28°00'S, 179°00'W

Now called Havre Trough.

van der Linden, 1966

Raukumara Plain*

A large, flat terrace on the lower continental slope ranging from 50 km to 150 km north of East Cape. Lies at a depth of 2,300 m.

Position : 35°30'S – 37°00'S, 179°30'E – 178°30'E

Named after the Raukumara Peninsula which extends to East Cape.

Brodie, 1964a
van der Linden, 1968 (Cook, Ch)
Monahan *et al.*, 1982 (Ch)
Wright, 1990 (Havre Trough, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Reed Seavalley

A wide, flat-floored valley with bottom depth of 405 m aligned NW–SE on central Chatham Rise, west of Chatham Island.

Position : 43°25'S, 179°18'E

Named for John Reed, scientist in charge of the Global Marine expeditions in 1967/68 on the *Moray Rose* to the Chatham Rise.

Mitchell & Cullen, 1984 (Ch)

Reinga Basin*

An enclosed basin that trends NW–SE between the Maria Ridge and the southern end of the Norfolk Ridge. Centred about 200 km west of Cape Reinga, Northland. Floor of basin between 2,000 m and 3,800 m deep.

Position : 34°50'S, 170°20'E

Takes its name from the area on the mainland.

van der Linden, 1968 (Three Kings, Ch)

Reinga Ridge*

Trends NW–SE between the southern end of the main Norfolk Ridge (north of Wanganella Bank) and the Maria Ridge off Northland. Extends from 200 km to 400 km northwest of Cape Reinga. Surrounded by depths greater than 1,700 m deep. Crest about 400 m deep at its southeastern end plunging northwards to 1,700 m.

Position : 33°20'S, 170°05'E

van der Linden, 1967
Lawrence, 1967 (Ch)
van der Linden, 1968 (Three Kings, Ch)

Rekohu Canyon*

On the northern flank of the Chatham Rise from about 100 km to 150 km due north of the Chatham Islands. Axis ranges in depth from 2,000 m to 3,000 m. Separates the eastern end of the Rekohu Salient from the Chatham Rise.

Position : 42°30'S, 176°30'W

Rekohu is the ancient Maori name for Chatham Islands.

Cullen, 1969 (Chatham, Ch)

Rekohu Salient*

A terrace extending eastwards into a ridge on the northern flank of the Chatham Rise. Terrace and crest of ridge are between 1,000 m and 3,000 m deep.

Position : 42°40'S – 42°20'S, 178°50'W – 177°00'W

Cullen, 1969 (Chatham, Ch)

Reserve Bank*

In the western portion of Chatham Rise, about 300 km east of Banks Peninsula. Rises from a depth of about 400 m to a minimum recorded depth of 230 m.

Position : 43°15'S, 177°05'E

So named because of the large reserves of glauconite found on the bank.

Krause, 1964 (Bounty, Ch)
Krause & Cullen, 1970 (Bounty, Ch)

Resolution Ridge*

Trending NE–SW at the foot of the continental slope, 100 km west of Puysegur Point, Fiordland. Partly separated from the continental slope by the northern end of the Puysegur Trench. Rises from 4,000 m to 4,500 m deep to a 2,500 m deep crest.

Position : 46°10'S, 164°55'E

Named after HMS *Resolution* in which Capt. Cook

made his 1772–76 and 1778–80 voyages.

van der Linden & Hayes, 1972 (Resolution, Ch)

Ritchie Banks*

A group of banks on the middle part of the continental slope off Hawke Bay. Centred about 60 km southeast of Mahia Peninsula. Surrounded by depths greater than 900 m and rising to a minimum recorded depth of 247 m.

Position : 39°37'S, 178°25'E

Named for Rear-Admiral G.S. Ritchie Commanding Officer of HMNZS *Lachlan*, 1954–57.

Pantin, 1963
Pantin, 1963 (Mahia, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)
Arron & Lewis, 1991 (Mahia, Ch)

Ritchie Ridge

This ridge has an almost direct N–S alignment and extends from a knoll-like crest in the north to Ritchie Banks in the south. Has a crest at 840 m east of the North and South Ritchie Troughs.

Position : 39°20'S, 178°26'E

Arron & Lewis, 1991 (Mahia, Ch)

The Rolling Ground

A series of semi-detached shoals aligned NW–SE on the continental shelf, where depths are less than 18 m, in the South Taranaki Bight.

Position : 39°54'S, 174°10'E

Origin of name unknown.

Brodie, 1969 (Patea, Ch

Ross Seavalley

This NE–SW trending 420 m deep valley-like area is on central Chatham Rise, west of Chatham Island.

Position : 43°24'S, 179°34'E

Named for Tom Ross, petrologist at N.Z. Geological Survey who co-authored the first description of Chatham Rise phosphorites.

Mitchell & Cullen, 1984 (Ch)

Ruahine Canyon

Aligned N–S, this canyon is incised into the outer continental shelf, in the outermost Bay of Plenty region. It reaches depths of 1,500 m at its northern end.

Position : 35°38'S, 176°08'E

Named after Ruahine Trig on Great Barrier Island.

Wright, 1989 (Cuvier, Ch)

Ruapuke Basin*

An enclosed basin in the continental shelf at the eastern end of Foveaux Strait. Lies about 10 km south of Ruapuke Island. Floor of the basin at a depth of 65 m, about 10 m below the sill to seaward.

Position : 46°53'S, 168°30'E

Takes its name from the adjacent island.

Cullen, 1967
Cullen, 1964 (Foveaux, Ch)

Ruatoria Knoll

Located southeast of East Cape at the base of the Awanui Seavalley, it rises from a depth of about 3,000 m to 2,500 m.

Position : 38°07'S, 179°40'E

Named after Ruatoria, township on adjacent mainland.

Baldwin & Lewis, 1991 (Cook, Ch)

Rumble I Seamount*

On the eastern flank of the Havre Trough near its southern end; close to the southern end of the Kermadec Ridge and northern limit of the Raukumara Plain. Rises from depths of about 2,400 m to a minimum recorded depth of 1,100 m.

Position : 35°30'S, 178°52.5'E

So named because of acoustic activity in its vicinity.

Kibblewhite, 1966
Kibblewhite & Denham, 1967

Rumble II Seamount*

On the eastern flank of the Havre Trough near its southern end; close to the southern end of the Kermadec Ridge and northern limit of the Rauku-

mara Plain. Rises from depths of about 2,700 m to a minimum recorded depth of 880 m.

Position : 35°25'S, 178°39'E

Kibblewhite, 1966
Kibblewhite & Denham, 1967
Terrill & Packham, 1974 (Ch)

Rumble III Seamount*

On the slope between the northern part of the Raukumara Plain and the southern end of the Havre Trough. Rises from depths of about 2,800 m to a minimum recorded depth of 117 m.

Position : 35°45'S, 178°28'E

Kibblewhite, 1966
Kibblewhite & Denham, 1967
van der Linden, 1968 (Three Kings, Ch)
Terrill & Packham, 1974 (Ch)
Wright, 1990 (Havre Trough, Ch)

Rumble IV Seamount*

On the slope between the Raukumara Plain and the southern end of the Havre Trough. Rises from depths of about 2,300 m to less than 1,000 m deep.

Position : 36°08'S, 178°03'E

Kibblewhite, 1967
Wright, 1990 (Havre Trough, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Runaway Sea Valley

A N-S trending downslope break off the shelf edge in the outer Bay of Plenty region.

Position : 37°20'S, – 37°26'S, 177°50'E – 177°54'E

Named after Cape Runaway on the mainland.

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Rungapapa Knoll

This nearly circular knoll is broad and flat on top. Its crest is at 200 m depth. The most southern of a large group of knolls, highs, etc. in the Bay of Plenty area.

Position : 37°33'S, 176°59'E

Name derived from the Maori : runga = top, upper part; papa = broad, flat and hard.

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Rurima Ridge

This ridge, on the continental shelf in the Bay of Plenty area, trends northeast towards the White Island Trough. It descends from 100 m to about 300 m.

Position : 37°40'S, 177°00'E

Named after the nearby islands.

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Sarah Seamounts

These seamounts mark the eastern flank of the Three Kings Rise.

Position : 29°30'S, 174°30'E.

Origin of name unknown.

Davey, 1982

Saunders Canyon*

Incised into the outer continental shelf and upper continental slope from 14 km to 40 km off Otago Peninsula. Axis ranges in depth from 200 m to 1,200 m.

Position : 45°57'S, 171°00'E

Named after Cape Saunders on Otago Peninsula.

Brodie, 1970 (Otago, Ch)
Carter, 1986 (Otago, Ch)

Saunders Channel

Aligned E–W offshore of Otago Peninsula and reaches a depth of 1,550 m from 1,200 m.

Position : 46°02'S, 171°36'E

Carter, 1986 (Otago, Ch)

Saunders Ridges

This feature, in the outer Taieri Bight, about 20 km offshore, aligned NE–SW, is described as a major drowned shore-face ridge complex.

Position : 46°00'S, 170°35'E

Carter & Carter, 1986
Carter, 1986 (Otago, Ch)

Scarrott Knoll

This triangular-shaped knoll on central Chatham Rise, west of Chatham Islands, rises from a depth of 400 m to a crest at 365 m deep.

Position : 43°39'S, 179°44'E

Named for Capt. Peter Scarrott, Officer and later Master of N.Z. Oceanographic vessel RV *Tangaroa.*, from 1972 to 1984.

Mitchell & Cullen, 1984 (Ch)

Silent I Seamount*

At the southern end of the Kermadec Ridge at its merger with the Raukumara Plain, it rises from depths of about 2,000 m to a depth of about 400 m.

Position : 34°58.5'S, 179°17'E

So named because of the lack of any acoustic activity in the immediate area.

Kibblewhite, 1966
Kibblewhite & Denham, 1967
Terrill & Packham, 1974 (Ch)

Silent II Seamount*

On the eastern flank of the Havre Trough near its southern end; close to the southern end of the Kermadec Ridge and the northern limit of the Raukumara Plain. Rises from depths of about 2,200 m to a minimum recorded depth of 700 m.

Position : 35°10.5'S, 178°53'E

Kibblewhite, 1966
Kibblewhite & Denham, 1967

Simpson Spur

A flat-topped spur with a crest at 385 m deep, nearly as wide as long, on central Chatham Rise, west of the Chatham Islands.

Position : 43°24'S, 179°23'E

Named for Peter Simpson, university technician on the 1967 *Moray Rose* expedition to Chatham Rise.

Mitchell & Cullen, 1984 (Ch)

Snares Depression*

An ENE–WSW trending saddle separating the continental shelf of New Zealand from the Auckland Island Shelf and Pukaki Rise. Forms the northwestern edge of the Campbell Plateau. Generally between 550 m and 750 m deep and includes several small enclosed basins. A broad, sinuous sea valley cuts the eastern end of the basin and deepens gently northwestward towards the Bounty Trough; increasing in depth from 730 m to more than 1,000 m.

Position : 49°30'S – 48°30'S, 166°30'E – 169°30'E

Named after the Snares Islands.

Summerhayes, 1969a
Summerhayes, 1967 (Auckland, Ch)

Solander Basin

This basin is bounded to the east by the Stewart Island Shelf. To the south it opens out into the head of the Solander Trough. About 50 km in a W–E direction and about 60 km N–S.

Position : 46°40'S, 167°00'E.

Takes its name from nearby Solander Island.

Norris & Carter, 1980

Solander Trough*

Extending about 500 km SSW from Solander Island at the western end of Foveaux Strait. Separates the northern end of the Macquarie Ridge from the shelves around Stewart Island, the Snares, and the Auckland Islands. Increases in depth and in width towards the south and merges into the 4,000 m deep Emerald Basin at its southern end. More than half of its length is between 3,000 m and 4,000 m deep.

Position : 46°45'S – 51°15'S, 166°30'E – 163°50'E

Brodie, 1958a, b
Summerhayes, 1967 (Auckland Is, Ch)
Summerhayes, 1967 (Auckland, Ch)
van der Linden & Hayes, 1972 (Resolution, Ch)

South Ahipara Bank

A small bank, cresting at 50 m on the continental shelf, offshore from the southern end of Ninety-Mile Beach, northwest New Zealand.

Position : 35°10'S, 172°54'E

Named after the settlement on the mainland.

Irwin & Eade, 1984 (Hokianga, Ch)

South Arm*

The main branch of Cook Strait Canyon in eastern Cook Strait. Lies to the south of Nicholson Bank. Ranges in depth from 300 m to 1,300 m.

Position : 41°36'S, 174°40'E

So named because it is the most southern arm of the Cook Strait Canyon.

Brodie, 1966 (Cook Strait, Ch)

South Bounty Channel*

A tributary of the Bounty Channel. The southernmost of the three tributaries that are incised into the western end of the Bounty Trough off Otago. Extends from about 90 km to about 240 km east of the Clutha River, from 1,000– 2,000 m deep.

Position : 46°40'S – 46°'S, 171°00'E – 173°00'E

Krause & Cullen, 1970 (Bounty, Ch)
Carter, 1986 (Otago, Ch)

South Chatham Slope

A broad, flat area, aligned W–E, on the outer continental slope, south of the Chatham Rise, southeast of Banks Peninsula. Each end has a bank — Veryan at the west, Matheson at the east. Depths are from 500 m to 750 m.

Position : 44°30'S, 175°10'E

Krause & Cullen, 1970 (Bounty, Ch)
Herzer, 1977 (Banks, Ch)

Southern Viti Canyon

On the upper continental slope 100 km WNW of Cape Egmont. Extends from a depth of 200 m to 1,000 m.

Position : 39°07'S, 172°27'E

van der Linden, 1966 (Egmont, Ch)

South Fiji Basin*

A vast, flat-floored, 3,500–5,000 m deep basin that lies between Fiji and New Zealand. Bounded to the north by the New Hebrides Trench, to the south by the continental slope off Northland, to the west by the Three Kings Rise and a ridge that extends southwards from the Loyalty Islands, and to the east by the South Fiji Ridge and the Colville Ridge.

Position : 21°00'S – 33°00'S, 169°00'E – 175°00'E

Wiseman & Ovey, 1954
Lawrence, 1957 (Ch)
van der Linden, 1968 (Three Kings, Ch)
Mammerickx *et al.*, 1971 (Ch

South Fiji Ridge*

Extends southwards from Fiji for 1,600 km. Crest generally between 500 m and 1,500 m deep but rising to sea level at the Lau Islands, the Minerva Reefs, and the Wolverine Shoals. Separates the South Fiji Basin from the Havre Depression and Lau Basin.

Position : 17°00'S – 32°00'S, 174°00'W – 174°00'E

Wiseman & Ovey, 1954
Brodie & Hatherton, 1958
van der Linden, 1968 (Three Kings, Ch)

South Madden Bank*

On the upper continental slope 38 km offshore from southern Hawkes Bay Land District. Rises from depths of 700 m to 2,000 m to a minimum recorded depth of 161 m. Separated from the North Madden Bank by the Madden Canyon.

Position : 40°38'S, 177°01'E

Pantin, 1963
Pantin, 1963 (Turnagain, Ch)
Lewis, 1976 (Turnagain, Ch)

South Maria Ridge

This is the southern component of the Maria Ridge. It is NW-trending offshore from New Zealand on the continental shelf.

Position : 34°06'S, 171°50'E

van der Linden, 1968 (Three Kings, Ch)
Mitchell & Eade, 1990 (Three kings, Ch)

South Ngatoro High

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
see **Waitotahi Knoll**

South Paritu Ridge

South of the head of the Paritu Trough this ridge is aligned NE–SW. It has an elongated flat top and crests at 1,250 m rising from 1,500 m.

Position : 39°06'S, 178°35'E

Arron & Lewis, 1991 (Mahia, Ch)

South Ritchie Trough

This trough lies west of Ritchie Banks and tends NNE–SSW reaching a depth of 1,050 m deep.

Position : 39°36'S, 178°15'E

Arron & Lewis, 1991 (Mahia, Ch)

Southwestern Pacific Basin*

A vast, triangular abyssal basin, which is generally between 4,500 m and 5,500 m deep. Bounded on the west by the Tonga and Kermadec Trenches, the Subantarctic Slope and the Macquarie Ridge, in the southeast by the Pacific–Antarctic Ridge, and in the northeast by the chain of Polynesian Islands that extends from Easter Island, through Tuamoto Islands, the Society Islands, the northern Cook Islands, and the Tokelau Islands to Samoa.

From : 23°00'S – 57°00'S, 170°00'E – 132°00'W

Wiseman & Ovey, 1954
Brodie & Hatherton, 1958
Mammerickx *et al.*, 1973 (Ch)
Carter, 1980 (Ch)

Standard Seamount*

In the southern part of the Tasman Basin 700 km ESE of Sydney. Rises from a depth of 4,500 m to a depth of about 3,400 m.

Position : 35°00'S, 157°45'E

Named for J.C. Standard who has described the morphology of the eastern Tasman Sea.

van der Linden, 1968 (Lord Howe, Ch)

Star of Bengal Bank

A bank on the crest of the Kermadec Ridge rising from 2,700 m to 200 m depth about 103 km SSW of L'Esperance Rock, the southernmost islet of the Kermadec Islands.

Position : 32°30'S, 180°00

Given the name from the ship *Star of Bengal* which was wrecked in this area.

Brodie & Hatherton, 1958

Stephens Hole*

A small, deep enclosed basin on the inner continental shelf off D'Urville Island, Marlborough Sounds. Trends WNW–ESE, the axis being between 200 m and 300 m deep and only 2 km off Stephens Island. Bounded to seaward by a 100 m deep sill.

Position : 40°39'S, 174°01'E

Named after adjacent Stephens Island.

Brodie, 1966 (Cook Strait, Ch)
Mitchell & Lewis, 1980 (Cook Strait, Ch)

Subantarctic Slope*

The southeastern boundary of the New Zealand Plateau and part of the western boundary of the Southwestern Pacific Basin. Extends from the eastern end of the Chatham Rise, southwestwards for 1,200 km to the southern end of the Campbell Plateau.

Position : 42°30'S – 55°30'S, 168°00'W – 169°00'E

Brodie, 1964a
Lawrence, 1967 (Ch)
Carter, 1980 (Ch)

Surville Canyon

A narrow NE-trending valley off the continental shelf, north of northernmost New Zealand. It reaches a depth of 1,850 m.

Position : 34°07'S, 173°05'E

Named after the French commander J.F.M. de Surville, who visited the far north of New Zealand.

Mitchell & Eade, 1990 (North Cape, Ch)

Taiaroa Canyon

An E–W aligned canyon incised into the outer continental shelf off the Otago Peninsula. With a bottom depth of 1,300 m it is one of the tributaries of the Bounty Channel.

Position : 45°45'S, 171°20'E

Named after Taiaroa Heads at the entrance to Otago Harbour.

Carter & Carter, 1981 (Oamaru, Ch)
Carter, 1986 (Otago, Ch)

Taiaroa Gap*

Incised into the upper continental shelf and

upper continental slope from 25 km to 50 km east of Otago Peninsula. One of the tributaries of the North (Bounty) Channel. Axis extends from 130 m to 1,500 m deep and trends generally W–E.

Position : 45°40'S, 171°06'E

Brodie, 1970 (Otago, Ch)

Taieri Canyon*

Trending NW–SE on the upper continental slope 40 km south of Otago Peninsula. One of the tributaries of the Centre (Bounty) Channel. Extends from a depth of 150 m to about 1,500 m.

Position : 46°15'S, 170,47'E

Named after the Taieri River on the adjacent land.

Brodie, 1970 (Otago, Ch)

Taieri Channel*

Trending NW–SE on the lower continental slopes southwest of Otago Peninsula. Has a depth of 1,300 m at channel floor.

Position : 46°28'S, 171°20'E

Carter, 1986 (Otago, Ch)

Taranui Gap*

A saddle between the main Norfolk Ridge and Wanganella bank. Centre of saddle about 1,700 m deep.

Position : 32°10'S, 167°40'E

Name taken from the adjacent Taranui Sea Valley

Eade, 1972 (Wanganella Bank, Ch)

Taranui Sea Valley*

Extends from the Wanganella Bank eastward for 180 km to the Norfolk Basin. Axis ranges in depth from 1,100 m to 4,000 m but half of its length is nearly flat at a depth of 2,000 m.

Position : 32°25'S, 168°10'E

Named after the then N.Z. Oceanographic research vessel, MV *Taranui*.

van der Linden, 1967
van der Linden, 1968 (Lord Howe, Ch)
Eade, 1972 (Wanganella Bank, Ch)

Tasman Basin*

A large abyssal basin lying between Australia and the New Zaland Plateau in the north and between the South Tasmania Ridge and the Macquarie Ridge in the south. Its northern boundary is at the southern edges of the Great Barrier Reef and the Bellona Plateau at latitude 24°S and its southern boundary is the Indian–Pacific Ridge at between latitudes 50°S and 60°S. Only about 250 km wide in the north between Queensland and the Lord Howe Rise but more than 1,500 km wide in the south between the South Tasmania Ridge and the Macquarie Ridge. Floor generally between 4,500 m and 5,500 m deep but reaching a maximum depth of 5,944 m near Australia.

Originally named Thomson Basin, after Sir C. Wyville Thomson (Murray, 1895), now named after Abel Tasman who explored the Australian and New Zealand coasts in 1642 and was the first European to sight New Zealand.

From : 40°00'S – 45°00'S, 155°00'E – 160°00'E

Named as Tasman Abyssal Plain by Monahan *et al.* (1982, Ch) at position 35°00'S, 155°00'E.

Fleming, 1951
Lawrence, 1967 (Ch)
Kroenke *et al.*, 1983 (Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Tataweka Canyon

Incised into the outer continental shelf, it reaches depths of 1,500 m at its northernmost end.

Position : 35°28'S, 175°54'E

Named after the smaller of two islands at the entrance to Manaia Harbour, an inlet on the western coast of Coromandel Peninsula.

Wright, 1989 (Cuvier, Ch)

Taupo Bank* Standard, 1961
see **Taupo Seamount**

Taupo Guyot Standard, 1961
see **Taupo Seamount**

Taupo Seamount

In the Tasman Basin about 450 km east of Sydney. Rises from a depth of 4,500 m to a mini-

mum recorded depth of 126 m. It is the most southerly of the Tasmantid Seamounts.

Position : 33°20'S, 156°20'E

Named after HMNZS *Taupo* which surveyed the bank in 1951.

Standard, 1961
Menard, 1968 (Ch)
Monahan *et al.*, 1982 (Ch)

Tauranga Canyon

A narrow NE–trending feature as deep as 950 m at its southern end, and 1,200 m at its northern end, in the outer Bay of Plenty area.

Position : 37°24'S, 176°53'E

Name taken from the city on the adjacent mainland.

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Tauranga Depression*

van der Linden, 1968 (Cook, Ch)
see **Tauranga Trough**

Tauranga Sea Valley

A N-trending feature, forming an extension further to the southwest, of the Tauranga Canyon. Has a depth of 850 m.

Position : 37°27'S, 176°47'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Tauranga Trough

Extends down the continental slope from 40 km to 120 km offshore from the Bay of Plenty. Axis extends from 600 m to 2,200 m deep and trends NNE–SSW, at right angles to the regional slope and adjacent coast.

Position : 37°10'S, 177°10'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)
Wright, 1990 (Havre Trough, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Tauroa Knoll

A knoll of rounded triangular shape cresting at 950 m depth in the Tasman Sea offshore northwest New Zealand.

Position : 34°48'S, 171°40'E

Irwin & Eade, 1984 (Hokianga, Ch)

Te Arawa High

A crest at 600 m to the north of White Island Ridge offshore, in the Bay of Plenty region.

Position : 37°24'S, 177°09'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Teina Knoll

One of a group of knolls rising to 1,050 m depth in the Bay of Plenty region.

Position : 37°04'S, 176°52'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Te Kapu Bank

On the continental slope 56 km offshore from the Mahia Peninsula. Separated from the continental slope by a 2,300 m deep Ritchie Ridge and rises to a minimum recorded depth of 1,850 m.

Position : 39°19'S, 178°35'E

Named after Mount Te Kapu on the Mahia Peninsula.

Arron & Lewis, 1991 (Mahia, Ch)

Te Kapu High*

Pantin, 1963
Pantin, 1963 (Mahia, Ch)
see Te Kapu Bank

Telecom Knoll

In the New Caledonia Basin, due west of Auckland, approximately 294 km from the New Zealand coast, it rises from a depth of 1,900 m to 1,500 m.

Position : 36°56'S, 170°40'E

Feature discovered on a cable route survey under contract to Telecom Corporation of New Zealand from data generously donated by Telecom.

Baldwin & Lewis, 1991 (Cook, Ch)

Terawhiti Sill

A narrow sill, at 200–250 m depth, separating Narrows Basin in the north from Cook Strait Canyon in the south, west of the Wellington Peninsula.

Position : 41°19'S, 174°31'E

Named after nearby Cape Terawhiti.

Mitchell & Lewis, 1980 (Cook Strait, Ch)

Thomson Trough*

Sinous, NE–SW trending trough in the Tasman Basin about 650 km west of Fiordland. Axis from 5,000 m to 5,300 m, which is as much as 500 m below the surrounding abyssal floor.

Position : 44°30'S – 45°45'S, 158°30'E – 157°00'E

Named for Sir C. Wyville Thomson, the British naturalist who was in charge of scientific operations on board HMS *Challenger*.

van der Linden & Hayes, 1972 (Resolution, Ch)

Three Kings Plateau

Is 10,000 km^2 in area, less than 500 m deep, and includes the mainland shelf and submarine ridges and banks centred on Three Kings Islands of northermost New Zealand.

Position : 32°00'S – 34°00'S, 171°30'E – 173°30'E

Takes its name from the nearby islands.

Nelson *et al.*, 1982

Three Kings Ridge

Is a N-trending ridge on the western side of the South Fiji Basin, with narrow, steep-sided, crestal region bordered by broad western and eastern flanks. Crest irregular but has peaks that commonly rise to within 1,000 m of the surface.

Position : 28°00'S – 32°00'S, 172°30'E

Kroenke & Eade, 1982
Kroenke *et al.*, 1983 (Ch)

Three Kings Rise*

Extends northwards for 550 km from the lower continental slope between North Cape and Three Kings Islands. Separates the Norfolk Basin from the South Fiji Basin. Crest irregular but generally between 400 m and 1,800 m deep.

Position : 29°00'S – 33°45'S, 172°30'E

Brodie, 1964a
van der Linden, 1968 (Three Kings, Ch)

Three Kings Shelf

The continental shelf area surrounding the Three Kings Islands separated by Johnson Trough to the south from the continental shelf off Cape Reinga, northern New Zealand.

From : 33°07'S – 34°16'S, 171°57'E – 172°11'E

Stanton, 1973
Eade, 1988 (Three Kings Shelf, Ch)

Three Kings Trough*

An enclosed basin between the two crests of the Maria Ridge. Extends from 5 km to 70 km northwestwards from Three Kings Islands. Axis increases in depth from 800 m at its southeastern end to 2,500 m deep at its northwestern end.

Position : 33°50'S, 171°45'E

Summerhayes, 1969c
van der Linden, 1968 (Three Kings, Ch)
Eade, 1988 (Three Kings Shelf, Ch)
Mitchell & Eade, 1990 (Three Kings, Ch)

Tokomairiro Canyon

Trending NW–SE on the upper continental slope south of Otago Peninsula. Extends from a depth of about 250 m to about 900 m deep.

Position : 46°25'S, 170°32'E

Named after the river on the adjacent mainland.

Carter, 1986 (Otago, Ch)

Tolaga Knoll

East of Young Nicks Head. this knoll has a crest aligned NNW. It rises to 680 m from about 1,000 m,

Position : 38°47'E, 178°47'E

Named after the settlement on the adjacent mainland.

Arron & Lewis, 1991 (Mahia, Ch)

Tonga Ridge*

Trends NNE–SSW through the Vavau, Ha'apai,

and Tongatapu Islands of Tonga. Continues northwards from the Kermadec Ridge. Crest generally less than 1,000 m deep.

Position : 21°40'S – 25°30'S – 177°00'W – 175°30'W

Wiseman & Ovey, 1954
Eade, 1972 (Wanganella Bank, Ch)

Tonga Trench*

Trends NNE–SSW for 1,200 km from near Samoa to the northern end of the Kermadec Trench near Ozbourn Seamount. Lies about 150 km east of the Tonga Ridge. Axis generally between 9,000 m and 10,000 m deep. Maximum depth believed to be about 10,850 m deep.

Position : 16°00'S, 24°30'S, 175°10'W – 172°10'W

Wiseman & Ovey, 1954
Eade, 1972 (Wanganella Bank, Ch)

Tuaheni Bank

On the upper continental slope 50 km offshore from Gisborne Land District. Rises from depths of 3,500–1,750 m to a crest at 1,000 m.

Position : 38°50'S, 178°40'E

Named after Tuaheni Point on the adjacent land.

Arron & Lewis, 1991 (Mahia, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Tuaheni High* Pantin, 1963
Pantin, 1963 (Mahia, Ch)
see **Tuaheni Bank**

Tuakana Knoll

One of a group of knolls rising to 250 m depth in the Bay of Plenty region.

Position : 37°09'S, 176°51'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Tuatoro Knoll

A pinnacle of rock rising to 200 m depth, northeast of White Island in the Bay of Plenty.

Position : 37°29'S, 177°13'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright , 1989 (Bay of Plenty, Ch)

Tui Seamount*

On the eastern flank of the Three Kings Rise. Rises from about 1,500 m deep to a depth of 494 m.

Position : 30°20S, 173°00'E

Named after RNZFA *Tui* from which soundings in this area were taken in 1956.

Brodie, 1964a
van der Linden, 1968 (Three Kings, Ch)
Terrill & Packham, 1974 (Ch)

Tui II Seamount*

On the crest of the Three Kings Rise. Rises to a minimum depth of 395 m.

Position : 30°22'S, 172°55'E

van der Linden, 1968 (Three Kings, Ch)
Terrill & Packham, 1974 (Ch)

Tumokemoke Knoll

One of a group of knolls, northwest of White Island in the Bay of Plenty. Crests at 250 m deep.

Position : 37°28'S, 176°55'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Turnagain Banks* Pantin, 1963
Pantin, 1963 (Turnagain, Ch)
see **Turnagain Pinnacles**

Turnagain Pinnacles

Four pinnacles on the inner continental shelf off Cape Turnagain, southern Hawkes Bay Land District. They are about 4, 9, 10, and 15 km from the Cape and reach minimum depths of 25, 90, 64, and 133 m respectively.

Position : 40°33'S, 176°42'E

Name taken from Cape Turnagain on nearby land.

Lewis, 1976 (Turnagain, Ch)

Turnagain Sea Valley*

On the upper continental slope from 25 km to 30 km SSE of of Cape Turnagain, southern Hawkes Bay Land District. Extends from a depth of 350 m to 1,000 m deep. Trends generally obliquely to the regional slope.

Position : 40°50'S, 176°47'E

Pantin, 1963
Pantin, 1963 (Turnagain, Ch)
Lewis, 1976 (Turnagain, Ch)

Turnagain Terrace

A gently sloping terrace on the upper continental slope south of Cape Turnagain. At shelf edge it is 200 m deep extending to 400 m where it drops suddenly to form the Turnagain Sea Valley.

Position : 40°45'S, 176°40'E

Lewis, 1976 (Turnagain, Ch)

Urry Bank*

Near the western end of the South Chatham Slope between the Chatham Rise and the Bounty Trough. Based on a single unconfirmed sounding of 117 m in an area generally about 1,000 m deep.

Position : 45°00'S, 174°14'E

Named after W.D. Urry who first suggested the presence of this feature.

Urry, 1949
Brodie, 1964a
Brodie & Pantin, 1960 (South Is, Ch)

Urry Knolls

A group of knolls rising from depths of 900 m to crests of 500–800 m on the continental slope southeast of Banks Peninsula.

Position : 44°36'S–44°45'S – 174°13'E–174°56'E

Herzer, 1977 (Banks, Ch)

Uruti Basin

A broad, flat depression trending NE–SW on the continental slope 30 km off the Wairarapa coast. Floor at a depth of between 1,100 m and 1,200 m.

Position : 41°12'S, 176°25'E

Takes its name from Uruti Point on adjacent land.

Mitchell, 1988 (Palliser, Ch)

Uruti Depression* Pantin, 1963
Pantin, 1963 (Palliser, Ch)

see **Uruti Basin**

Uruti High* Pantin, 1963
Pantin, 1963 (Palliser, Ch)

see **Uruti Ridge**

Uruti Ridge

A NE–SW trending ridge on the continental slope 40 km off the Wairarapa coast. Crest generally between 900 m and 1,100 m deep. Defines the seaward edge of the Uruti Basin.

Position : 41°15'S, 176°39'E

Mitchell, 1988 (Palliser, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Van Diemen Bank*

On the west of the South Maria Ridge, 40 km northwest of the Three Kings Islands. Flat topped at depths varying from 99 m to 132 m.

Position : 33°58'S, 171°45'E

Named after Cape Maria van Diemen which is adjacent to Cape Reinga at the northern extremity of New Zealand.

Now named Middlesex Bank.

Summerhayes, 1969c

Veryan Bank*

At the western end of the South Chatham Slope, which lies between the Chatham Rise and the Bounty Trough. Centred about 250 km ESE of Banks Peninsula. Rises from surrounding depths of between 500 m and 700 m to a flat top at about 150 m deep.

Position : 44°15'S, 176°05'E

Named after HMS *Veryan Bay* from which soundings in this area were taken in 1950.

Brodie, 1958a, 1964a
Brodie & Pantin, 1960 (South Is, Ch)
Krause & Cullen, 1970 (Bounty, Ch)

Veryan Channels*

At the western end of the South Chatham Slope. Extends from near the Mernoo Gap to join the Bounty Channel at the western end of the Bounty Trough. Axes range in depth from about 1,000 m to about 3,000 m. The number of channels is uncertain because the area has not yet been thoroughly

surveyed.

Krause, 1966
Krause & Cullen, 1970 (Bounty, Ch)

Visscher Sea Valley*

On the continental slope from 60 km to 120 km off northwestern Nelson Land District. Ranges in depth from 250 m deep at its southeastern extremity to about 600 m deep at its northwestern limit.

Position : 40°00'S, 171°50'E

Named for Frans Jacobszoon Visscher, chief pilot of Tasman's vessels *Heemskerck* and *Zeehan* 1642–43.

van der Linden, 1966 (Egmont, Ch)
Baldwin & Lewis, 1991 (Cook , Ch)

Viti Canyons*

Three canyons, the North, Central, and South Viti Canyons, all trending NW–SE on the upper continental slope, 100 km WNW of Cape Egmont, Taranaki. All extend from a depth of about 200 m to about 1,000 m at the southern end of the New Caledonia Basin. They lie immediately north of the Egmont Terrace.

Position : 39°00'S, 172°25'E

Named after the N.Z. Oceanographic Institute research vessel MV *Viti*.

van der Linden, 1966 (Egmont Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Waihape Sea Valley

Trends N–S on the outer continental slope, southeast of Banks Peninsula in depths of 950 m. Has the westernmost Urry Knoll at its northern end.

Position : 44°45'S, 174°19'E

Herzer, 1977 (Banks, Ch)

Waioeka Knoll

This N–S aligned knoll rises from 1,250 m to a crest at about 950 m on the Ngatoro Ridge in the outer Bay of Plenty area.

Position : 37°01'S, 177°21'E

The river and settlement on the adjacent mainland is Waioeka

Wright, 1989 (Bay of Plenty, Ch)

Wairaka High

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
see **Wairaka Ridge**

Wairaka Ridge

In the outer eastern Bay of Plenty area east of Ngatoro Ridge, this ridge aligned NE–SW crests at 1,400 m at its southern end.

Position : 37°04'S, 177°29'E

Lewis & Pantin, 1984
Wright, 1989 (Bay of Plenty, Ch)
Wright, 1990 (Havre Trough, Ch)

Wairarapa Arm*

Pantin, 1963
Pantin, 1963 (Palliser, Ch)
see **Wairarapa Canyon**

Wairarapa Canyon

A branch of the Cook Strait Canyon. Incised into the continental shelf and slope at the western side of Palliser Bay. At its head it slopes steeply from a depth of 40 m to a depth of 400 m. Its axis slopes more gently southwards to a depth of 750 m where it joins Nicholson Canyon (formerly Middle Arm) of the Cook Strait Canyon.

Position : 41°28'S, 174°58'E

Mitchell & Lewis, 1980 (Cook Strait, Ch)
Mitchell, 1988 (Palliser, Ch)
Mitchell, 1988 (Campbell, Ch)

Waitaki Canyon

Trending NW–SE on the continental shelf and upper continental slope, southwest of Banks Peninsula, this canyon has narrow, steep sides and depths from 250 m to 1,150 m.

Position : 45°10'S, 171°35'E

Name given after the river on the adjacent land.

Carter & Carter, 1981 (Oamaru, Ch)

Waitaki Channel

Appears to be the northern tributary flowing south into the North Bounty Channel, on the outer continental slope, southwest of Banks Peninsula. It reaches as deep as 1,100 m.

Position : 45°37'S, 172°05'E

Carter & Carter, 1981 (Oamaru, Ch)

Waitotahi Knoll

This knoll, on the northern side of the Ngatoro Ridge, outer Bay of Plenty area, has at least two crests at about 700 m, having risen from depths of 1,700 m.

Position : 37°05'S, 177°15'E

Wright, 1989 (Bay of Plenty, Ch)

Wanganella Bank*

On the crest of the Norfolk Ridge, 580 km northwest of North Cape and 360 km south of Norfolk Island. Trends N–S but is offset to the west compared with the main Norfolk Ridge to the north. Flat topped at a depth of about 130 m but with an isolated pinnacle rising to 82 m. Flat top is 7 km wide by 20 km long.

Position : 32°32'S, 167°29'E

Named after MV *Wanganella* which first located this bank in 1949.

Fleming, 1951
van der Linden, 1968 (Lord Howe, Ch)
Eade, 1972 (Wanganella Bank, Ch)

Wanganella Ridge

The ridge which lies immediately east of West Norfolk Ridge. It is shallowest (80 m) at Wanganella Bank from where it extends north to at least 31°S and possibly to 28°S, and southeast from the bank to about 35°S.

Position : 32°00'S, 167° 10'E

Eade, 1988
Eade, 1972 (Wanganella Bank, Ch)

Wanganella Trough

This N–S trending trough separates two crests of the Norfolk Ridge, at a depth of 1,500 m.

Position : 33°13'S, 167°19'E

Eade, 1988
van der Linden, 1968 (Lord Howe, Ch)

West Kawitihu Seamount

A cone-shaped seamount rising steeply on all sides from depths of 2,400 m to a crest at 1,250 m.

Position : 36°04'S, 177°19'E

Wright, 1989 (Cuvier, Ch)

West Ngatoro Knoll

The northernmost of a group of knolls on the western side of the Tauranga Trough, rising to 650 m depth in the Bay of Plenty area.

Position : 36°57'S, 176°52'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

West Norfolk Ridge*

The western crest of the double-crested, southern part of the Norfolk Ridge. Trends in an arc, being N–S at its southern end at the foot of the continental slope off Northland. Crest generally between 200 m and 1,400 m deep.

From 31°30'S–35°40'S – 166°50'E–170°30'E

Named after Norfolk Island.

van der Linden, 1967
van der Linden, 1968 (Lord Howe, Ch)

Whakaari High

A ridge at 150 m depth connecting the surrounding area of White Island to the Volkner Islets, northwest of White Island.

Position : 33°30'S, 177°07'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

Whakatane Seamount

A 1,100 m high, 14 km diameter seamount, north of Ngatoro Ridge, and east of the Ngatoro basin, within the outer Bay of Plenty–southern Havre Trough.

Position : 36°48'S, 177°27'E

Takes its name from the township on the mainland.

Wright *et al.*, 1990
Wright, 1990 (Havre Trough, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Whakatane Sea Valleys

An area in the inner Bay of Plenty off the continental shelf between 500 m and 650 m deep. Has two NE-trending arms directed towards the continental shelf.

Position : 37°33'S, 176°49'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

Whangape Bank

A bank with a crest at 450 m depth offshore of the continental shelf in the Tasman Sea, northwestern New Zealand.

Position : 35°27'S, 172°30'E

Whangape is an area on the adjacent land.

Irwin & Eade, 1984 (Hokianga, Ch)

Whangaroa Basin*

An enclosed basin on the lower continental slope about 100 km north of North Cape. Trends NW–SE, parallel with the adjacent Maria Ridge and with the regional slope off North Cape. Floor of basin about 2,100 m deep. Limited in the west by the Three Kings Rise and in the northeast by a 1,400–1,900 m deep sill.

Position : 33°20'S, 173°00'E

Named after Whangaroa Harbour on the east coast of Auckland Peninsula.

van der Linden, 1968 (Three Kings, Ch)
Terrill & Packham, 1974 (Ch)
Mitchell & Eade, 1990 (North Cape, Ch)

Whangaroa Seamount

Lying northeast of northern New Zealand this NW-trending seamount has at least three crests. That of the northern portion rises from 1,700 m to a flat top at 1,100 m, while the two further south crest at 8950 m and 1,050 m respectively.

Position : Centred on 33°45'S, 173°57'E

Mitchell & Eade, 1990 (North Cape, Ch)

Whangaroa Sea Valley*

Trends NNW–SSE obliquely down the continental slope east of Northland. Extends from 30 km off Whangaroa Harbour at a depth of about 500 m to the Whangaroa Basin at a depth of 2,100 m.

Position : 34°30'S, 174°00'E

Brodie, 1964a

Whareama Bank*

On the outer continental shelf 17 km offshore from the Wairarapa coast. Separated from the remainder of the continental shelf by a 130 m deep saddle and rising to a minimum recorded depth of 111 m.

Position : 41°09'S, 176°16'E

Takes its name from the river on the adjacent coast.

Pantin, 1963
Pantin, 1963 (Palliser, Ch)
Mitchell, 1988 (Palliser, Ch)

Whareama Sea Valley*

On the upper part of the continental slope from 18 km to 25 km offshore from the Wairarapa coast. Extends from the 130 m deep shelf break to the 1,100 mdeep Uruti Basin.

Position : 41°07'S, 176°20'E

Pantin, 1973
Pantin, 1963 (Palliser, Ch)
Mitchell, 1988 (Palliser, Ch)

Wharekauri Bank*

On the Chatham Rise, 45 km northeast of the Chatham Islands. Rises to a depth of less than 250 m. Separated from the continental shelf of the Chatham Islands by the Wharekauri Sea Valley and a 290 m deep saddle.

Position : 43°39'S, 175°40'W

Wharekauri is an ancient Maori name for the Chatham Islands.

Cullen, 1967 (Chatham Is, Ch)

Wharekauri Sea Valley*

Incised into the North Chatham Slope beginning 35 km east of the Chatham Islands, at a depth of 300 m and extending northwards for 40 km to a depth of about 600 m. Separates Wharekauri Bank from the continental shelf of the Chatham Islands.

Position : 43°40'S, 175°48'W

Cullen, 1967 (Chatham Is, Ch)

Whenuanuipapa Plain

A large flat area of seafloor beyond the foot of the continental slope between East Cape and Mahia Peninsula, bounded to the west by Ruatoria Knoll, the Gisborne Knolls, and Young Nicks Seamount.

Position : 39°25'S – 38°10'S, 179°50'E – 179°00'E

Name in Maori means 'Big Flat Plain'.

Baldwin & Lewis, 1991 (Cook, Ch)

White Island Canyon

This NE-aligned canyon, as deep as 1,100 m, at the head of the White Island Trough, is just offshore at the continental slope and almost due south of White Island. It has three arms — West, Central, and East — West and Central to the south of its head, and East a longer distance away to the east.

Position : 37°35'S, 177°13'E

Takes its name from the nearby island.

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)

White Island Ridge*

On the continental slope off the Bay of Plenty. Trends N–S, perpendicular to the regional slope. Extends for 50 km northwards from White Island. Crest of ridge between 500 m and 1,500 m deep.

Position : 37°25'S, 177°15'E

Brodie, 1964a
van der Linden, 1968 (Cook, Ch)
Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)
Baldwin & Lewis, 1991 (Cook, Ch)

White Island Sea Valley

An area to the east of the Rurima Ridge, on the continental slope, inner Bay of Plenty. It has an overall depth of less than 200 m.

Position : 37°41'S, 177°05'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)

White Island Trench*

Fleming, 1952
Brodie & Pantin, 1960 (North Is., Ch)
van der Linden, 1968 (Cook, Ch)
see **White Island Trough**

White Island Trough

On the continental slope off the Bay of Plenty. Extends from a point 25 km off Whakatane, northwards for 80 km to the western edge of the Raukumara Plain. Axis ranges in depth from 150 m to 2,500 m.

Position : 37°20'S, 177°22'E

Pantin *et al.*, 1973 (Bay of Plenty, Ch)
Wright, 1989 (Bay of Plenty, Ch)
Wright, 1990 (Havre Trough, Ch)
Baldwin & Lewis, 1991 (Cook, Ch

Young Nick's Seamount

This seamount is on the margin of the Hikurangi Plateau approximately 160 km SEE off Mahia Peninsula, rising from a depth of 3,500–2,250 m.

Position : 39°30'S, 179°55'E

Named after Young Nick's Head on the adjacent mainland.

Baldwin & Lewis, 1991 (Cook, Ch)

Zeehan Seamount

A seamount in the northern Tasman Basin cresting at 2,750 m.

Position : 36°15'S, 159°55'E

Zeehan was one of Abel Tasman's vessels.

Eade and van der Linden, 1977 (Bellona, Ch)

LITERATURE CITED
and other relevant references.

ANDREWS, J.E.; EADE, J.V. 1973: Structure of the western continental margin, New Zealand and Challenger Plateau, eastern Tasman Sea. *Bulletin of the Geological Society of America 84(9)* : 3093–3100.

BARKER, P.H.; KIBLEWHITE, A.C. 1965: Physical oceanographic data from the *Tui* cruise, 1962. *N.Z. Journal of Science 8(4)* : 603–634.

BARNES, P.M. 1990: Provenance of Cretaceous accretionary wedge sediments : the Mangapokia Formation, Wairarapa, New Zealand. *N.Z. Journal of Geology and Geophysics 33* : 125–135.

BRADFORD, J.M. 1969: Notes on anomalous, British Antarctic (Terra Nova) Expedition, copepod records in the Three Kings Islands (New Zealand) region. *Transactions of the Royal Society of N.Z., Biological Sciences 11(8)* : 93–99.

BRADFORD, J.M.; HEATH, R.A.; CHANG, F.H.; HAY, C.H. 1982: The effect of warm-core eddies on oceanic productivity off northeastern New Zealand. *Deep-Sea Research 29(12A)* : 1501–1516.

BRODIE, J.W. 1952: Features of the sea-floor west of New Zealand. *N.Z. Journal of Science and Technology, Section B 33(5)* : 373–384.

BRODIE, J.W. 1958a: Structural significance of seafloor features around New Zealand. *Geologische Rundschau 47(2)* : 662–667.

BRODIE, J.W. 1958b: The sea floor around the Solander Islands. Pp 430–431 *in* Harrington, H.J.; Wood, B.L. "Quaternary andesitic volcanism at the Solander Islands". *N.Z. Journal of Geology and Geophysics 1(3)* : 419–31.

BRODIE, J.W. 1964a: Bathymetry of the New Zealand region. *Memoir, N.Z. Oceanographic Institute 11* : 54 p.

BRODIE, J.W. 1964b: The Fiordland Shelf and Milford Sound. Pp 15–23 *in* Skerman, T.M. (ed.) "Studies of a Southern Fiord". *Memoir, N.Z. Oceanographic Institute 17* : 101 p.

BRODIE, J.W. 1965: Aotea Seamount, eastern Tasman Sea. *N.Z. Journal of Geology and Geophysics 8(3)* : 510–517.

BRODIE, J.W.; DAWSON, E.W. 1965: Morphology of North Macquarie Ridge. *Nature, London 207(4999)* : 844–845.

BRODIE, J.W.; HATHERTON, T. 1958: The morphology of Kermadec and Hikurangi Trenches. *Deep-Sea Research 5(1)* : 18–28.

BURKE, C.A.; DRAKE, C.L. (Eds) 1974: "The Geology of Continental Margins". Springer-Verlag, New York. 1009 p.

CARTER, L. 1989: New occurrences of manganese nodules in the South-western Pacific Basin, east of New Zealand. *N.Z. Journal of Marine and Freshwater Research 23* : 247–253.

CARTER, L.; CARTER, R.M. 1986: Holocene evolution of the nearshore sand wedge, South Otago, continental shelf, New Zealand. *N.Z. Journal of Geology and Geophysics 29* : 413–424.

CARTER, L.; CARTER, R.M. 1988: Late Quaternary development of left-bank-dominant levees in the Bounty Trough, New Zealand. *Marine Geology 78* : 185–197.

CARTER, L.; CARTER, R.M.; GRIGGS, G.B. 1982: Sedimentation in the Conway Trough, a deep near-shore marine basin at the junction of the Alpine transform and Hikurangi subduction plate boundary, New Zealand. *Sedimentology 29(4)* : 475–497.

CARTER, L.; LEWIS, K.B.; DAVEY, F. 1988: Faults in Cook Strait and their bearing on the structure of central New Zealand. *N.Z. Journal of Geology and Geophysics 31* : 431–446.

CARTER, R.M.; CARTER, L. 1987: The Bounty Channel System : A 55-million-year-old sediment conduit to the deep sea, Southwest Pacific Ocean. *Geo-Marine Letters 7* : 183–190.

COLEMAN, P.J. (Ed.) 1973: "The Western Pacific – Island Arcs, Marginal Seas, Geochemistry". University of Western Australia Press, Nedlands. 675 p.

CONOLLY, J.R. 1969: Western Tasman sea floor. *N.Z. Journal of Geology and Geophysics 12(1)* : 310–343.

CULLEN, D.J. 1965: Autochthonous rocks from the Chatham Rise east of New Zealand. *N.Z. Journal of Geology and Geophysics 8(3)* : 1465–1474.

CULLEN, D.J. 1967a: Submarine evidence from New Zealand of a rapid rise in sea level about 11,000 years B.P. *Palaeogeography, Palaeoclimatology and Palaeoecology 3(3)* : 289–298.

CULLEN, D.J. 1967b: The Antipodes Fracture Zone, a major structure of the Southwest Pacific. *N.Z. Journal of Marine and Freshwater Research 1(1)* : 16–25.

CULLEN, D.J. 1970: A tectonic analysis of the Southwest Pacific. *N.Z. Journal of Geology and Geophysics 13(1)* : 7–20.

DAVEY, F.J. 1980: The Monowai Seamount : An active submarine volcanic centre on the Tonga–Kermadec Ridge (Note). *N.Z. Journal of Geology and Geophysics 23(4)* : 533–536.

DAVEY, F.J. 1982: The structure of the South Fiji Basin. *Tectonophysics 87* : 185–241.

DAWSON, E.W. 1965: Oceanography and marine zoology of the New Zealand subantarctic. *Proceedings of the N.Z. Ecological Society 12* : 44–57.

DEFENSE MAPPING AGENCY, 1981: "Gazetteer of Undersea Features. Names approved by the United States Board on Geographic Names. 3rd Edition". Defense Mapping Agency, Washington, D.C.

DUBOIS, J.; RAVENNE, C.; AUBERTIN, A.; LOUIS, J.; GUILLAUME, R.; LAUNAY, J.; MONTADERT, I. 1974: Continental margins near New Caledonia. Pp 521–535 *in* Burk, C.A.; Drake, C.L. (eds) "The Geology of Continental Margins". Springer-Verlag, New York. 1009 p.

EADE, J.V. 1988: The Norfolk Ridge system and its margins. Pp 303–324, Ch. 7 *in* : Nairn, A.E.M.; Stehli, F.G.; Uyeda, S. (eds) "The Ocean Basins and Margins, Vol. 7B". Plenum Publishing Corporation, New York.

EADE, J.V.; CARTER, L.; 1975: Definitions and code of nomenclature for the naming of morphologic features on the New Zealand seafloor. *NZOI Records 2(11)* : 129–139.

FAIRBRIDGE, R.W. 1962: Basis for submarine nomenclature in the South-West Pacific Ocean. *Deutsche Hydrographische Zeitschrift 15* : 1–15.

FAIRBRIDGE, R.W.; VAN DER LINDEN, W.J.M. 1966: Tasman Sea. Pp 898–902 *in* Fairbridge, R.W. (ed.) "Encyclopedia of Oceanogrpahy". Reinhold, New York. 1021 p.

FLEMING, C.A. 1951: Some Post-Miocene changes in New Zealand environments. *N.Z. Science Reviews 9(10)* : 166–171.

FLEMING, C.A. 1952: The White Island Trench : a submarine graben in the Bay of Plenty. *Proceedings of the 7th Pacific Science Congress, 3* : 210–213.

FLEMING, C.A.; REED, J.J. 1951: Mernoo Bank, east of Canterbury, New Zealand. *N.Z. Journal of Science and Technology, Section B 32(6)* : 17–30.

HANUS, V.; VANEK, J. 1979: Morphology and volcanism of the Wadati–Benioff zone in the Tonga–Kermadec system of recent subduction. *N.Z. Journal of Geology and Geophysics 22(6)* : 659–672.

HAYES, D.E.; RINGIS, J. 1973: Seafloor spreading in the Tasman Sea. *Nature , London 243(5408)* : 454–458.

HEFFERD, A.E. 1949: Oceanography of New Zealand seas. Report of the 6th Science Congress. *Transactions of the Royal Society of N.Z. 77(5)* : 212–221.

HERZER, R.H. 1975: Uneven submarine topography south of Mernoo Gap — the result of volcanism and submarine sliding (Note). *N.Z. Journal of Geology and Geophysics 18(1)* : 183–188.

HERZER, R.H. 1979: Submarine slides and submarine canyons on the continental slope off Canterbury, New Zealand. *N.Z. Journal of Geology and Geophysics 22(3)* : 391–406.

HOUTZ, R.E.; EWING, J.C.; EWING, M.; LONARDI, A.G. 1967: Seismic reflection profiles of the New Zealand Plateau. *Journal of Geophysical Research 72* : 4713–4729.

HYDROGRAPHIC DEPARTMENT, BRITISH ADMIRALTY, 1971: "New Zealand Pilot, 13th Edition". HMSO. 504 p.

HYDROGRAPHIC DEPARTMENT, BRITISH ADMIRALTY, 1983: "New Zealand Pilot. Supplement No. 9". HMSO. 119 p.

IHO/IOC, 1988: "Part 1. Gazetteer of geographical names of undersea features shown on the GEBCO and on the IHO small-scale international chart series". IHO Bureau, Monaco.

KATZ, H.R. 1974: Margins of the Southwest Pacific. Pp 549–565 *in* Burk, C.A.; Drake, C.L. (eds) "The Geology of Continental Margins". Springer-Verlag, New York. 1009 p.

KATZ, H.R. 1975: Ariel Bank off Gisborne — An offshore late Cenozoic structure, and the problem of acoustic

basement on the East Coast, North Island, New Zealand. *N.Z. Journal of Geology and Geophysics 18* : 93–108.

KIBBLEWHITE, A.C. 1966: The acoustic detection and location of an underwater volcano. *N.Z. Journal of Science 9(1)* : 178–199.

KIBBLEWHITE, A.C. 1967: Note on another active seamount in the southern Kermadec Ridge group. *N.Z. Journal of Science 10(1)* : 68–69.

KIBBLEWHITE, A.C.; DENHAM, R.N. 1967: The bathymetry and total magnetic field of the South Kermadec Ridge seamounts. *N.Z. Journal of Science 10(1)* : 52–67.

KRAUSE, D.C. 1966: Geology and geomagnetism of the Bounty region east of the South Island, New Zealand. *Memoir, N.Z. Oceanographic Institute 30* : 32 p.

KROENKE, L.W.; EADE, J.V. 1982: Three Kings Ridge : a west-facing arc. *Geo-Marine Letters 2(1/2)* : 5–10.

LEWIS, K.B. 1973a: Erosion and deposition on a tilting continental shelf during Quaternary oscillations of sea level. *N.Z. Journal of Geology and Geophysics 16(2)* : 281–301.

LEWIS, K.B. 1973b: Sediments on the continental shelf and slope between Napier and Castlepoint, New Zealand. *N.Z. Journal of Marine and Freshwater Research 7(3)* : 183–208.

LEWIS, K.B. 1974: Upper Tertiary rocks from the continental shelf and slope off southern Hawkes Bay. *N.Z. Journal of Marine and Freshwater Research 8(4)* : 663–670.

LEWIS, K.B.; BENNETT, D.J.; HERZER, R.H.; VON DER BORCH, C.C. 1985: Seismic stratigraphy and structure adjacent to an evolving plate boundary, western Chatham Rise, New Zealand. *In* Kennett, J.P.; von der Borch, C.C. *et al.* "Initial Reports of the Deep Sea Drilling Project, Volume 90". Washington. (U.S. Government Printing Office) : 1325–1337, 1 fig.

LEWIS, K.B.; EADE, J.V. 1974: Sedimentation in the vicinity of the Maui Gasfield. *N.Z. Oceanographic Institute, Oceanographic Summary 6* : 8 p.

LEWIS, K.B.; PANTIN, H.M. 1984: Intersection of a marginal basin with a continent : Structure and sediments of the Bay of Plenty, New Zealand. Pp 121–135 *in* Kokelaar, B.P.; Howells, M.F. (eds) "Marginal Basin Geology". (Geological Society Special Publications 16). Blackwell Scientific Publications, Oxford. 322 p.

MARSHALL, P. 1910: Ocean contours and earth movements in the Southwest Pacific. *Report of the Australasian Association for the Advancement of Science 12* : 432–450.

MENARD, H.W. 1964: "Marine Geology of the Pacific." McGraw-Hill Inc., New York. 271 p.

MURRAY, J. 1895: Summary of Scientific Results. Parts 1 and 2. *Report of the Scientific Results of the Exploring Voyage of H.M.S. Challenger 1873–1876.*

NELSON, C.S.; HANCOCK, G.E.; KAMP, P.J. 1982: Shelf to basin, temperate skeletal carbonate sediments, Three Kings Plateau, New Zealand. *Journal of Sedimentary Petrology 52(3)* : 717–732.

NORRIS, R.J.; CARTER, R.M. 1980: Offshore sedimentary basins at the southern end of the Alpine Fault, New Zealand. *Special Publication, International Association of Sedimentologists 4* : 237–265.

NORRIS, R.M. 1964: Sediments of Chatham Rise. *Memoir, N.Z. Oceanographic Institute 26* : 39 p.

NORRIS, R.M. 1978: Late Cenozoic geology of the west coast shelf between Karamea and the Waiho River, South Island, New Zealand. *Memoir, N.Z. Oceanographic Institute 81* : 28 p. + map.

PACKHAM, G.H.; TERRILL, A. 1975: Submarine geology of the South Fiji Basin. *In* Andrews, J.E.; Packham, G.H. *et al.* "Initial Reports of the Deep Sea Drilling Project, Volume 30". Washington (U.S. Government Printing Office) : 617–633.

PANTIN, H.M. 1963: Submarine morphology east of the North Island, New Zealand. *Memoir, N.Z. Oceanographic Institute 14* : 43 p.

PANTIN, H.M. 1966: Sedimentation in Hawke Bay. *Memoir, N.Z. Oceanographic Institute 28* : 70 p.

PROCTOR, R.; CARTER, L. 1989: Tidal and sedimentary response to the late Quaternary closure and opening of Cook Strait, New Zealand : Results from numerical modeling. *Paleoceanography 4(2)* : 167–180.

SLATER, R.A.; GOODWIN, R.H. 1973: Tasman Sea guyots. *Marine Geology 14* : 81–99.

STANDARD, J.C. 1961: Submarine geology of the Tasman Sea. *Bulletin of the Geological Society of America 72* : 1777–1788.

STANTON, B.R. 1973: Hydrological investigations around northern New Zealand. *N.Z. Journal of Marine and Freshwater Research 7(1 & 2)* : 85–110.

SUMMERHAYES, C.P. 1967a: The marine geology of the Auckland Islands area. *Transactions of the Royal Society of N.Z., Geology 4(13)* : 235–244.

SUMMERHAYES, C.P. 1967b: Marine environments of economic mineral deposition around New Zealand : a review. *N.Z. Journal of Marine and Freshwater Research 1(3)* : 267–282.

SUMMERHAYES, C.P. 1969a: Marine geology of the New Zealand subantarctic sea floor. *Memoir, N.Z. Oceanographic Institute 50* : 92 p.

SUMMERHAYES, C.P. 1969b: Recent sedimentation around northernmost New Zealand. *N.Z. Journal of Geology and Geophysics 12(1)* : 172–207.

SUMMERHAYES, C.P. 1969c: Submarine geology and geomorphology off northern New Zealand. *N.Z. Journal of Geology and Geophysics 12(2 & 3)* : 507–525.

SUMMERHAYES, C.P. 1974: Macquarie–Balleny Ridge. Pp 381–386 *in* Spencer, A.M. (ed.) "Mesozoic–Cenozoic Orogenic Belts. Data for Orogenic Studies". Scottish Academic Press, Edinburgh. 809 p.

URRY, W.D. 1949: Radioactivity of ocean sediments. VI. Concentrations of the radio-elements in marine sediments of the Southern Hemisphere. *American Journal of Science 247(4)* : 257–275.

VAN DER LINDEN, W.J.M. 1966: Southwest Pacific Ocean. Pp 846–852 *in* Fairbridge, R.W. (ed.) "Encyclo pedia of Oceanography". Reinhold, New York. 1021 p.

VAN DER LINDEN, W.J.M. 1967: Structural relationships in the Tasman Sea and Southwest Pacific Ocean. *N.Z. Journal of Geology and Geophysics 10(5)* : 1280–1301.

VAN DER LINDEN, W.J.M. 1969: Extinct mid-ocean ridges in the Tasman Sea and in the western Pacific. *Earth and Planetary Science Letters 6* : 483–490.

VAN DER LINDEN, W.J.M. 1970: Morphology of the Tasman Sea floor. *N.Z. Journal of Geology and Geophysics 13(1)* : 282–291.

VAN DER LINDEN, W.J.M.; NORRIS, R.M. 1974: Structure and Quaternary history of Karamea Bight, South Island, New Zealand. *N.Z. Journal of Geology and Geophysics 17(2) : 375–388.*

WISEMAN, J.D.H.; OVEY, C.D. 1954: Proposed names of features on the deep-sea floor. 1. The Pacific Ocean. *Deep-Sea Research 2* : 93–106.

WRIGHT, I.C. 1990: Late Quaternary faulting of the offshore Whakatane graben, Taupo Volcanic Zone, New Zealand. *N.Z. Journal of Geology and Geophysics 33(2)* : 245–256.

WRIGHT, I.C.; CARTER, L.; LEWIS, K.B. 1990: GLORIA survey of the oceanic–continental transition of the Havre–Taupo back-arc basin. *Geo-Marine Letters 10* : 59–67.

WRIGHT, I.C. (in pres): Shallow structure and active tectonism of an offshore continental back-arc spreading system : The Taupo Volcanic Zone, New Zealand. *Marine Geology.*

WRIGHT, I.C. (in press): Southern Havre Trough—Bay of Plenty (New Zealand) : Structure and seismic stratigraphy of an active back-arc basin complex. *In* : Ballance, P.F. (ed.) "Soth Pacific Sedimentary Basins : Sedimentary Basins of the World". Elsevier.

APPENDIX 1

LIST OF CHARTS

N.Z. Oceanographic Institute Charts

ARRON, E.S.; LEWIS, K.B. 1991: Mahia Bathymetry, 2nd edition. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,00.*

BALDWIN, R.P.; LEWIS, K.B. 1991: Cook Bathymetry, 2nd edition. *N.Z. Oceanographic Institute Chart, Oceanic Series 1:1,000,000.*

BRODIE, J.W. 1965: Tasman Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

BRODIE, J.W. 1966: Campbell Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

BRODIE, J.W. 1966: Cook Strait Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

BRODIE, J.W. 1967: Nuggets Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

BRODIE, J.W. 1969: Otago Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

BRODIE, J.W. 1969: Patea Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

BRODIE, J.W.; PANTIN, H.M. 1960: North Island, New Zealand, Bathymetry, 1:2,191,400. *N.Z. Oceanographic Institute Chart, Miscellaneous Series No. 12.*

BRODIE, J.W.; PANTIN, H.M. 1960: South Island, New Zealand, Bathymetry, 1:2,191,400. *N.Z. Oceanographic Institute Chart, Miscellaneous Series No. 13.*

CARTER, L. 1976: Cuvier Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

CARTER, L. 1980: New Zealand Region Bathymetry, 2nd edition, 1:6,000,000. *N.Z. Oceanographic Institute Chart, Miscellaneous Series No. 15.*

CARTER, L. 1981: Jackson Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

CARTER, L. 1986: Otago Bathymetry, 2nd edition. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

CARTER, L.; CARTER, R.M. 1981: Oamaru Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

CARTER, L.; EADE, J.V. 1979: New Zealand Region Physiography, 1:4,000,000. *N.Z. Oceanographic Institute Chart, Miscellaneous Series 51.*

CULLEN, D.J. 1964: Foveaux Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

CULLEN, D.J. 1969: Chatham Bathymetry. *N.Z. Oceanographic Institute Chart, Oceanic Series 1:1,000,000*

CULLEN, D.J. 1967: Chatham Islands Bathymetry. *N.Z. Oceanographic Institute Chart, Island Series 1:200,000.*

CULLEN, D.J. 1969: Antipodes Islands Bathymetry. *N.Z. Oceanographic Institute Chart, Island Series 1:200,000.*

CULLEN, D.J. 1969: Bounty Islands Bathymetry. *N.Z. Oceanographic Institute Chart, Island Series 1:200,000.*

CULLEN, D.J. 1970: Macquarie Island Bathymetry. *N.Z. Oceanographic Institute Chart, Island Series 1:200,000.*

CULLEN, D.J. 1970: Tectonic Map of the Southwest Pacific, 1:10,000,000. *N.Z. Oceanographic Institute Chart, Miscellaneous Series 20.*

CULLEN, D.J. 1971: Campbell Island Bathymetry. *N.Z. Oceanographic Institute Chart, Island Series 1:200,000.*

CULLEN, D.J. 1977: East Cape Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

CULLEN, D.J.; BRODIE, J.W. 1966: Pegasus Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

EADE, J.V. 1971: Poor Knights Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

EADE, J.V. 1972: Hokitika Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

EADE, J.V. 1972: Wanganella Bank Bathymetry, 1:200,000. *N.Z. Oceanographic Institute Chart, Miscellaneous Series 21.*

EADE, J.V. 1974: Hauraki Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

EADE, J.V. 1988: Three Kings Shelf Bathymetry, 1:50,000. *N.Z. Oceanographic Institute Chart, Miscellaneous Series 66.*

EADE, J.V. ; VAN DER LINDEN, W.J.M. 1977: Bellona Bathymetry. *N.Z. Oceanograaphic Institute Chart, Oceanic Series 1:1,000,000.*

HERZER, R.H. 1977: Banks Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

HERZER, R.H. 1977: Mernoo Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

HERZER, R.H. 1980: Ellesmere Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

HERZER, R.H.; CARTER, L. 1983: Pegasus Bathymetry, 2nd edition. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

HUGHES, S.L.M. 1987: Nuggets Bathymetry, 2nd edition. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

IRWIN, J.; EADE, J.V. 1984: Hokianga Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

IRWIN, J.; EADE, J.V. 1984: Kaipara Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

KRAUSE, D.C. 1964: Bounty Bathymetry. *N.Z. Oceanographic Institute Chart, Oceanic Series 1:1,000,000.*

KRAUSE, D.C.; CULLEN, D.J. 1970: Bounty Bathymetry, 2nd edition. *N.Z. Oceanographic Institute Chart, Oceanic Series 1:1,000,000.*

LAWRENCE, P. 1967: New Zealand Region Bathymetry, 1:6,000,000. *N.Z. Oceanographic Institute Chart, Miscellaneous Series 15.*

LEWIS, K.B. 1976: Turnagain Bathymetry, 2nd edition. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

LEWIS, K.B.; GIBB, J.G. 1973: Turnagain Sediments. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

MAIN, W.deL.; McKNIGHT, D.G. 1981: Norfolk Island Bathymetry. *N.Z. Oceanographic Institute Chart, Island Series 1:200,000.*

MITCHELL, J.S. 1986: Tasman Bathymetry, 2nd edition. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

MITCHELL, J.S. 1988: Campbell Bathymetry, 2nd edition *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

MITCHELL, J.S. 1988: Palliser Bathymetry, 2nd edition. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

MITCHELL, J.S. 1991: Hauraki Bathymetry, 2nd edition. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

MITCHELL, J.S.; CULLEN, D.J. 1984: Central Chatham Rise Bathymetry, 1:50,000. (2 sheets). *N.Z. Oceanographic Institute Chart, Miscellaneous Series 60.*

MITCHELL, J.S.; EADE, J.V. 1990: North Cape Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

MITCHELL, J.S.; EADE, J.V. 1990: Three Kings Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

MITCHELL, J.S.; LEWIS, K.B. 1980: Cook Strait Bathymetry, 2nd edition. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

NORRIS, R.M. 1979: Foulwind Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

NORRIS, R.M.; VAN DER LINDEN, W.J.M. 1972: Karamea Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

PANTIN, H.M. 1961: Palliser Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

PANTIN, H.M. 1963: Mahia Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

PANTIN, H.M. 1963: Turnagain Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

PANTIN, H.M.; HERZER, R.H.; GLASBY, G.P. 1973: Bay of Plenty Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

SUMMERHAYES, C.P. 1966: Pukaki Bathymetry. *N.Z. Oceanographic Institute Chart, Oceanic Series 1:1,000,000.*

SUMMERHAYES, C.P. 1967: Campbell Bathymetry. *N.Z. Oceanographic Institute Chart, Oceanic Series 1:1,000,000.*

SUMMERHAYES, C.P. 1967: Auckland Bathymetry. *N.Z. Oceanographic Institute Chart, Oceanic Series 1:1,000,000.*

SUMMERHAYES, C.P. 1967: Auckland Islands Bathymetry. *N.Z. Oceanographic Institute Chart, Island Series 1:200,000.*

SUMMERHAYES, C.P.. 1967: Macquarie Bathymetry. *N.Z. OceanographicInstitute Chart, Oceanic Series 1:1,000,000.*

SUMMERHAYES, C.P. 1968: Lord Howe Bathymetry. *N.Z. Oceanographic Institute Chart, Oceanic Series 1:1,000,000.*

VAN DER LINDEN, W.J.M. 1966: Egmont Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

VAN DER LINDEN, W.J.M. 1968: Raglan Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

VAN DER LINDEN, W.J.M. 1968: Cook Bathymetry. *N.Z. Oceanographic Institute Chart, Oceanic Series 1:1,000,000.*

VAN DER LINDEN, W.J.M. 1968: Three Kings Bathymetry. *N.Z. Oceanographic Institute, Oceanic Series 1:1,000,000.*

VAN DER LINDEN, W.J.M. 1969: Norfolk Bathymetry. *N.Z. Oceanographic Institute Chart, Oceanic Series 1:1,000,000.*

VAN DER LINDEN, W.J.M. 1973: Mokau Bathymetry. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

VAN DER LINDEN, W.J.M.; HAYES, D.E. 1972: Resolution Bathymetry. *N.Z. Oceanographic Institute Chart, Oceanic Series 1:1,000,000.*

WRIGHT, I.C. 1989: Cuvier Bathymetry, 2nd edition. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

WRIGHT, I.C. 1989: Bay of Plenty Bathymetry, 2nd edition. *N.Z. Oceanographic Institute Chart, Coastal Series 1:200,000.*

WRIGHT, I.C. 1990: Bay of Plenty–Southern Havre Trough Physiography, 1:400,000. *N.Z. Oceanographic Institute Chart, Miscellaneous Series 68.*

Charts from Other Institutions and Sources

BRITISH ADMIRALTY, 1905: Cape Runaway to Gable End Foreland (1:145,000). *Chart BA3500.*

BRODIE, J.W.; HATHERTON, T. 1958: Bathymetry of the Kermadec Trench area. Fig. 1. *in* "The Morphology of Kermadec and Hikurangi Trenches". *Deep-Sea Research 5(1)* : 18–28.

DAVEY, F.J. 1982: Bathymetry of the South Fiji Basin. Fig. 2. *in* "The Structure of the South Fiji Basin". *Tectonophysics 87* : 185–241.

HYDROGRAPHIC OFFICE, ROYAL NEW ZEALAND NAVY, 1972: North Cape, 1:200,000. *Chart NZ41.*

HYDROGRAPHIC OFFICE, ROYAL NEW ZEALAND NAVY, 1981: South Pacific Ocean : Tasman and Coral Seas, Australia to northern New Zealand and Fiji. 1:3,500,000. *NZ4602 (INT. 602)*

KROENKE, L.W.; JOUANNIC, C.; WOODWARD, P. (Comps) 1983: Bathymetry of the Southwest Pacific. Chart 1 of the Geophysical Atlas of the Southwest Pacific. 2 Sheets. Scale 1:6,442,192. CCOP/SOPAC. Suva, Fiji.

MAMMERICKX, J.; CHASE, T.E.; SMITH, S.M.; TAYLOR, I.L. 1971: Bathymetry of the South Pacific. Chart 12. Scripps Institution of Oceanography, La Jolla.

MENARD, H.W., CHASE, T.E.; KARIG, D.E.; NEWHOUSE, ;.A.; TAYLOR, I.J. 1968: Bathymetry of the Southwest Pacific. University of California, San Diego.

MONAHAN, D.; FALCONER, R.H.K.; THARP, M. (Scient. Co-ords) 1982: General Bathymetric Chart of the Oceans (GEBCO). 5th Edition. Sheet 5.10. IOH/IOC (UNESCO).

TERRILL, A.; PACKHAM, G.H. 1974: Bathymetry of the South Fiji Basin, 1:1,700,000. Department of Geology and Geophysics, University of Sydney, N.S.W., Australia.